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Social Touch & Body Exploration Through Handheld Electronic Interactive Games

I. INTRODUCTION

The contemporary design object

I'm examining through the lens of Victor Papanek's Function Complex model [1] is a handheld electronic interactive toy (Fig. 1.); name unknown, made in China, purchased from an online retailer in 2011. In addition, I'll also consider game design theories, such as Schell's basic



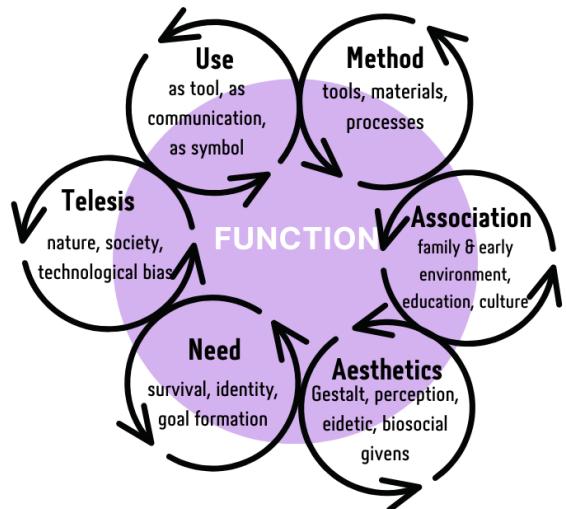
Fig. 1. Handheld Electronic Toy (maker unknown), photo by author 2023

elements of game design because game mechanics have such a strong role in the object performing its function. The main game mechanic of the toy is that a sound plays each time players touching an electronic touch sensor make skin-to-skin contact with each other. The toy depends on social physical interaction between players for the sound game controls to work, and uses touch capacitor technology to control this requirement to play. Because skin conducts electricity, when players are each connected to a capacitor and touch, a circuit between them is created. Different sounds occur when different bodies touch, because circuits that control those sounds have been brought together through the two human bodies connecting. Players use touch

between them, to control the progression of sound, allowing for improvisation and variance in game experience, depending on with whom and how the game is played.

II. PAPANEK'S FUNCTION COMPLEX

Victor Papanek's text, *What is Design? A Definition of the Function Complex* (1984) offers a criteria to evaluate contemporary design aspects called The Function Complex model (Fig. 2) that this essay will consider the electronic handheld interactive toy through. The diagram shows the dynamic actions and relationships that make up the function complex (7). The six aspects identified in the model seek to articulate a balanced blend of this-or-that paradigms, such as soft-hard, feeling-thinking, and intuitive-intellectual dichotomies (7). Aspects of Papanek's model can be observed throughout the object's design and blended to support another. Papanek places a high value on designers going beyond the primary functional requirements of Method, Use, Need, Telesis, Aesthetics, and Association; and to strive for a more concise statement of precision and simplicity (26). Papanek refers to the particular satisfaction derived from the simplicity of a thing as elegance (26). For Papanek to speak of an elegant solution, refers to something that reduces the complex to the simple. The object I have chosen inspires Papanek's version of aesthetic satisfaction because it offers approachable, simple and intuitive use, without being complicated or needing instructions to operate it (despite the technological complexity running things underneath the exterior body).

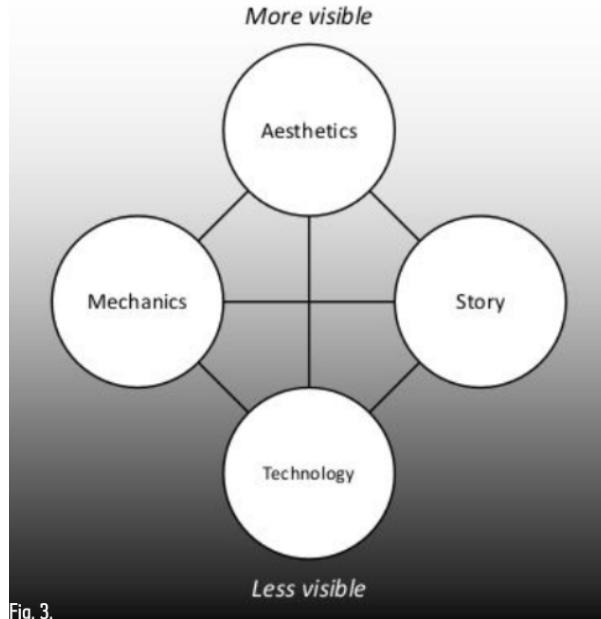


Papanek's Function Complex

Fig. 2. "Papanek's Function Complex", author's diagram 2023

III. SCHELL'S ELEMENTS OF GAME DESIGN.

The Art of Game Design : a Book of Lenses (2008) outlines elements author Jesse Schell considers necessary to elevate game design to art; Mechanics, Narrative, Technology, and Aesthetics (Fig. 3.) [2]. In the diagram all are necessary to be balanced for an artful game, and some are more and less visible to players. Schell defines video game mechanics as encompassing how players interact with each other and rest of the fundamental interlocking pieces of a game, such as rules, challenges, goals, actions, strategies, game states, in a meaningful way (53). Game Mechanics are a major component of this object's function and blend with aspects that Papanek's model points to, while also giving more modern language to speak about the interactive electronic design that I feel Papanek's model does not give justice to the full complexity of this layer for game motivated design objectives.



SCHELL, J. *The Art of Game Design A Book of Lenses*. 1. ed. Burlington: Morgan Kaufmann, 2008. (p. 42)

IV. OBJECT DESCRIPTION

The object (Fig. 4. Fig. 5. Fig. 6.) can cover the palm of an adult human sized hand. It is shaped to take on a humanoid form. The toy's outer casing is constructed of a plastic material that is mostly a white colour, except some parts in blue that accentuate the humanoid creature qualities of feet and hand extremities. There are two protruding blue dots that look like eyes on a face, and a small oval mouth shaped divot below the eyes. On the chest there are three different

shaped small blue buttons that are used to turn the toy on/off, pursue the selection of sounds, and confirm the selection. There are a series of small holes in a circular shape that form the “belly” of the creature, covering the speaker and allowing sound not to be muffled. The toy is powered by a AAA battery. When the “on/off” button is pressed two small red lights glow warmly where the cheeks would be. The toy makes a noise that sounds like it is saying “hello” in a baby-voice, followed by a short lofi digital sound clip that sounds like synthesizer keyboard violin notes. Through the simple button interface, players can explore a variety of sound game categories. The play starts once the game type selection is confirmed by pressing the “ok” button.

V. CUTE ASSOCIATION

The toy has a “cute” humanoid anthropomorphic blob shape. Konrad Lorenz in their work *Studies in Animal and Human Behavior* (1971) proposes the concept of baby schema (Kindchenschema), as a set of facial and body features that make a creature appear "cute" and inspires the motivation to care for it [3]. Papanek says that Association is a shared human psychological conditioning that often goes back to earliest childhood memories, and it can bias us towards a given value (19). I think this fits within



Papanek's concept of the attribute, and the overall cuteness of the toy is part of its Aesthetic. In game design, Aesthetics refers to how a game looks, sounds, smells, tastes, and feels. Similar to Papanek, who says that Aesthetics is one of the most important tools for a designer, because it informs shape, forms and colors into objects that move and please people (2008, pg. 22); Schell places a high regard on Aesthetics, because they have the most direct relationship to a player's experience (54). From the simple blob creature shape, to the blushing cheeks and baby-voice greeting, the toy uses a cute aesthetic as a way to make what could be quite complex in terms of the technology, approachable.

VI. FUNCTION COMPLEX ASPECTS & GAME DESIGN ELEMENTS: BLENDED

With its approachable, cute humanoid blob form, the object invites safety and curiosity more than fear of technology or an assumed required skill set necessary to engage. The toy fits easily in the hand because of its contoured shape and is molded in a way that when physically gripped by a hand, the finger placement naturally holds the contours and rests on a metal touch capacitive sensor input. The "belly" of the toy lifts up in a slight contour, while being a practical design solution for a speaker to best amplify sound. The belly shape also helps position the finger placement, so that when the object is gripped the touch sensors are



Fig. 8. Finger Position Design. Handheld Electronic Toy [maker unknown], photo by author 2023



Fig. 7. Finger Position Design. Handheld Electronic Toy [maker unknown], photo by author 2023

covered. The capacitive touch sensors are located on each of the four extremities of the toy, and allow for four different human players to comfortably hold the toy's limb with one hand, facing each other with it centered between them, with a free arm to interact with each other and create circuits through touch. The toy's body casing design enables the necessary positioning of the human body to physically interface with the object and its technological elements to use the game function. Blue plastic that accentuates the humanoid creature qualities of feet and hand extremities, offer visual cues to players as to where to hold and what to touch, to use it as an electronic device. Papanek says that the telesic content of a design must reflect the times and conditions that have given rise to it and must fit in with the general human socioeconomic order in which it is to operate (17). The toy came out at a time, 2011, when sensor based electronics and microcontroller programming were becoming more widely available in the mainstream because of advances in production and technology [4]. Electronic learning toys began commercial production during this time because of the ease of coding and programming the technology, the low cost of the technology and the mass market availability [5].

VII. CONCLUSION

In light of covid-19 and social distancing context, I observe the toy lightens up fears about in-person socializing and gives a playful approach to being with others again and experimenting with social touching. With its cute, human-like appearance, its intuitive physical and visual design, and the technological methods it uses to create collective gameplay, this object generates curiosity and facilitates physical social interactions and body experiments amongst players. The object offers an elegant solution and masters the art of game design because it blends Papanek's aspects of Function Complex, while also balancing Schell's game design elements.

Works Cited

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