The Feeling of Kawaii Is a Function of Interaction

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Abstract. The author discusses the structure of the feeling of kawaii to clarify that it is a function of interaction. Interaction in this paper has a broader meaning, which is communication between a character and a person, while its general definition is mutual communication between a person and a person, or a person and a machine (computer). Clarification of the structure of the kawaii system is also useful in specific system structures in terms of engineering. The main outcome of this paper is a conclusion, based on a discussion of interaction and sensitivity, that interaction occurs where the recipient's sensitivity resonates with the sender's sensitivity, and consequently, its inclusive relation with the factors around kawaii is elucidated.

Keywords: Kawaii, interaction, sensitivity, visual communication.

1   Introduction

The Japanese adjective, kawaii, is characterized by its uniqueness to Japanese culture. The word kawaii was exported to English and French-speaking cultures and has found a place as is, without recourse to translation. The word "cute" may be regarded as an English counterpart of the Japanese kawaii, but this adjective implies quick-witted prettiness or vivaciousness on the part of girls, and does not contain the nuance of "infantile prettiness" that characterizes many Japanese anime characters. Thus, kawaii, written in the Roman alphabet, has gained currency outside Japan. Kawaii is often used in the titles of English-language websites describing anime works.

Whether or not you feel kawaii or how much you feel it varies from person to person. In this sense, it is a matter of sensitivity or sensibility and is subtly related to certain specific concepts.

The author proposes that omoshirosa, or "amusingness," occurs as a result of interactivity, and that kawaisa, which is the noun form of kawaii (hereinafter "kawaii-ness,") similarly occurs as a function of interactivity [1-2]. I propose that, to be able to clarify its essence, it is essential to discuss the concept of kawaii from the cultural or semantic viewpoints hidden in its background. I believe that discussion of this question centering on the concept of "interaction" will produce the most useful results, centered on the notion of the Shannon-Weaver communication model, by which a message is transmitted through a medium between the designer and the recipient as a mechanism of our feeling kawaii from a character or artifact [1].

In this paper, I discuss the structure of the feeling of kawaii to clarify that it is a function of interaction. Interaction in this paper has a broader meaning, which is communication between a character and a person, while its general definition is mutual communication between a person and a person, or a person and a machine (computer). In discussing the relationship between interactivity and kawaii-ness, I focus on following subjects: (a) interactive loop, (b) amount of information and narrativity.

Conventionally, the constituting factors of kawaii-ness are discussed from the psychoanalytical viewpoint. This feeling is composed of several terms, all of which are inextricably linked. As mentioned earlier, clarification of the relationship between kawaii-ness and "interaction" will be useful for future research on kawaii and may promote new developments in kawaii theory. Clarification of the structure of the kawaii system is also useful in specific system structures in terms of engineering.

The main outcome of this paper is a conclusion, based on a discussion of interaction and sensitivity, that interaction occurs where the recipient's sensitivity resonates with the sender's sensitivity, and consequently, its inclusive relation with the factors around kawaii is elucidated.
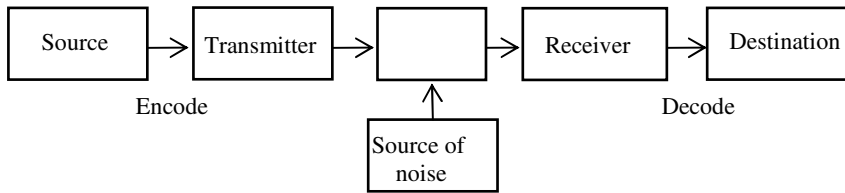
2   The Character Transmission Model

According to Kojien, one of the major dictionaries of the Japanese language, published by Iwanami Shoten, character as a Japanese word has the following meanings: (1) character or personality, (2) character in a novel, movie, theatrical play or manga, and its role, and (3) character, letter, or sign. In analyzing the word "character" in this paper, the generic definition that contains all of these is used. Today, we have quite a large number of characters, including what are called "local characters" [3].
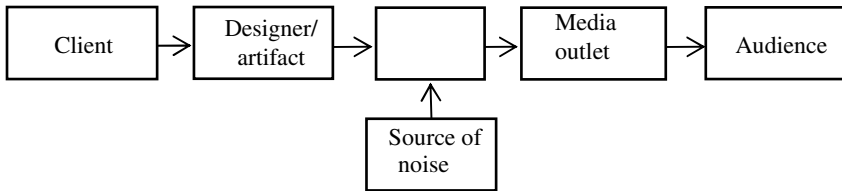
There are no end of questions to be answered about characters, such as "What are the factors common to popular characters?", "What has made a specific character so popular?," and "What are the differences between popular characters and other characters?." Communication between people and characters may be regarded as visual communication [4].

There are no generally known methods of identifying specific characteristics from these characters. In general, characters are often created based on the experience and hunches of their designers. It is important to think about how those characteristics are transmitted to the audience.
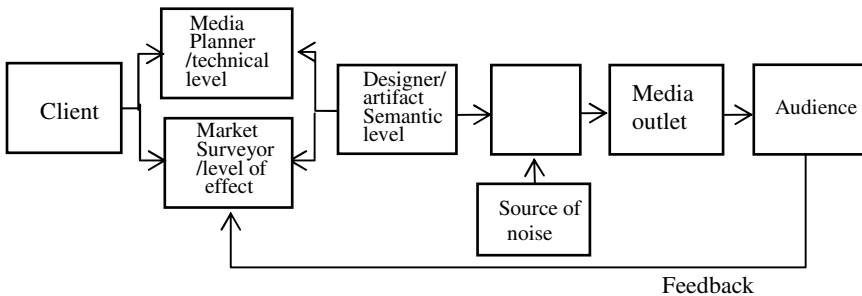
Now let's use the concept of Shannon-Weaver's transmission model of communication, as shown in Fig. 1(a), as the transmission model of information [5]. Applying this model to the design process, we get (b) of Fig. 1. The messages and ideas of a client are converted by the designer. There are three levels around the designer: technical, effective, and semantic, as shown in Fig. 1 (c). These levels are subject to correction or modification in response to feedback from the audience. Considering this condition, it suggests a greater reduction in the importance of the role of the designer. In other words, the expectations of the audience are fed back into the design to eventually determine its final form. This feedback loop promotes the evolution of the character.

(a) Shannon-Weaver's transmission model of communication

(b) Visual communication process

(c) Addition of three levels (technical, effective, and semantic) that makes the
    designer's role look smaller

Fig. 1. Change from the original Shannon-Weaver version to the modern post-Shannon version

When this concept is applied to a character, the source of transmission in the left half in Fig. 1 is the core idea of the character. It is manifested as a character in one way or another (encoding) and transmitted by the sender (transmitter) to the general public. Some noise is contained in the transmission process (transmission route) that is interpreted (decoded) when received by the audience. It is logical to assume that redundancy and entropy influence this noise.

The problem here is how the audience interprets the character when the character is shown to them (sensitive evaluation). That is, the key question is how to create a character with less noise. The question here is how to connect the character's interactivity to the audience's interpretation.

When designers create designs, they tend to create simple versions that contain as little noise as possible. This is because the simpler the design, the better it is transmitted to the receiver. In other words, noise (N) has to be low to increase the strength of the signal to be sent (S).

Is the S/N ratio of a hit character small? Quantitative verification of this question requires determination of what to evaluate about the character. I believe a qualitative research approach is effective in answering this question [6].
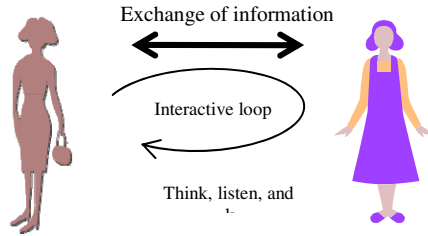
3   Interaction

When a person carries out an action (operation or movements), their counterpart (equipment or system) reacts to that action. This is the basis of the concept of interaction. In the field of human-computer interaction (HCI), when a person inputs data into a computer or its peripheral equipment, the purpose of HCI is to improve ease of use of the equipment by optimizing and automating the relationship with the reaction of the equipment or system. Since in this field, interaction addresses an artifact, specifically a computer, the idea of interaction applies very elegantly. However, the question naturally arises about whether or not interaction is a concept specific to computers or their peripherals. In ISO 13407, the definition of interaction is limited to "interactive computer-based systems." However, the understanding that this concept of interaction can be applied more broadly has become generally accepted by the people in this field. The question is, then, as to how far we can include artifacts as subjects of interaction. It appears that this question has been long discussed by the relevant ISO standard committee [7].

One notion is that, from the viewpoint of information processing, the definition of interactivity should include mechanically or electrically constituted interactivity in addition to electronically constituted interactivity. Let us then look at things from the viewpoint of "interactive equipment." A bicycle, which is not an item of electronic equipment, travels at different speeds in response to different degrees of pressure being applied to its pedals, and therefore can be regarded as a form of interactive equipment. By the same token, wheelchairs, cigarette lighters, ballpoint pens, scissors, umbrellas, and even zippers and buttons on clothes also fall into the category of interactive equipment. This concept appears to be more or less accepted by interface field people as a broad definition of interactive equipment.
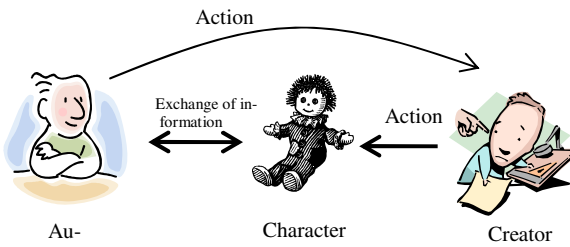
The question of whether or not a character is interactive naturally falls within this discussion. To be specific, a character is just a doll if it is simply placed in a location, as it contains no interactivity. However, if one reaches out for the character, the character can create the effect of soothing or curing one's personal feelings according to how one holds it or talks to it. A specific operation, then, generates a specific effect. In this sense, this set of conditions may be also regarded as interactive.

Seen from a different angle, if you do not properly connect to the character or you do not talk to it, you will not be able to achieve the expected result. In other words, these "visible objects" in a sense exert effects that are specific to how they are treated, and in this sense, they can be regarded as "interactive equipment" or "interactive tools."
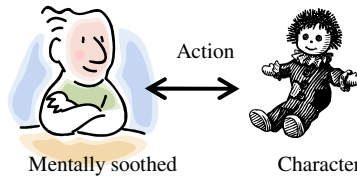
Based on the above concept, a broader sense of interaction is therefore used in this paper.

(a) Interactive loop (person to per-

(b) Using a character as a medium

(c) Action occurs, so change also takes

Fig. 2. Concept of interactive loop

4   *Kawaii*-ness and Interactivity

When information is cyclically exchanged between two people, as shown in Fig. 2(a), it is interactive. An interactive loop is formed when two people individually think or listen to and speak to each other. Information is exchanged via this interactive loop, so it is also an information flow loop.

It is logical to assume that this kind of interactive loop is also formed when the counterpart is a character, as shown in Fig. 2(b).

In this situation, there is the creator who created the character present behind the character. The character may thus be understood to play the role of "medium." Since it is necessary to dynamically change the character to make it more attractive in the prevailing environment, actions on the part of the two players are necessary. That is, interaction is necessary, and so it does, in fact, take place. In addition, as shown in

Fig. 2(c), when the audience contacts a character and is mentally soothed by it, it means they are subject to some action from the character. As a result, a change occurs in the audience that makes them want to feel more soothed. This indicates an ongoing change on the part of the audience, providing evidence of interaction between the two. It is then natural to believe that some kind of information exchange has occurred between the person and the character.

5   Interactivity and *Kawai*-ness

What is the relationship between interactivity and kawaii-ness? I'd like to discuss this question using "Homo Ludens," a book written by Johan Huizinga [8].

In his work, Huizinga points out that we find play present everywhere. He defines play as "a free activity conducted within its own proper boundaries of time and space according to fixed rules." He also discusses various concepts of play observed in different human activities. In particular, he provides a very thought-provoking suggestion about the universality of play that "we find play present everywhere."

In fact, this play has a very important relation with interactivity. The relation with kawaii-ness" will be clarified, with play serving as an intermediary.

Huizinga notes that the ancient Greeks differentiated play into two forms: agon and paidia. Agon is play as a competitive activity, a deadly serious pursuit within certain constraining rules, whereas paidia is play as a joyful activity. A track and field event at the Olympic Games is agon, while children playing ball is paidia. There is nothing in common between them. Agon and paidia sharing nothing in common means that track and field athletes cannot play together with children. They cannot coexist simultaneously. Interactivity may be regarded as a catalyst that puts these two very different things together. Let's think about a disagreement in intentions among adults. If the adults fully share the same opinion, their intentions run in parallel. If their opinions are far apart, their intentions collide head-on. There is an intermediate situation somewhere between them. When the intentions of the two parties are the same and run in parallel, there is no wonder, and nothing to learn. They just nod and agree with each other. In other words, nothing is created from a shared identical status. The ground for interaction is produced in a situation where people feel some disagreement in intentions. That is, no interaction will be created if everything is already known [9]. It is also reasonable to assume that interaction occurs where there is high entropy.

Here is one familiar example of interaction. A child deliberately fakes a disagreement in intentions to start an interaction with his parents. That is, the child sometimes plays a little trick to draw their attention. This is a typical example of interaction that occurs when there is a disagreement of intentions between two people.

The origin of the feeling of kawaii crucially needs an element of discommunication. The feeling of kawaii holds a fragile balance between the feeling of childishness that is totally devoid of the property of being empathized with, and a sense of eeriness. To engage in interaction with a character, a disagreement in intentions is necessary that can correspond to discommunication. I mentioned earlier that Sanrio characters are metonymic (animal-like) because of their inability to be emphasized with.

Japanese characters are established as extremely distinct signs. They are over-whelmingly emotionless, as you can see from the faces of Rilakkuma, Banao, or Ca-pybara-san. What you sense from them is a childish feeling, devoid of the property of being empathized with, which is considered to create the kawaii property. Based on the relational chains of kawaii, "lack of sympathism," "disagreement in intentions," and "interaction," the kawaii property may be taken as a function of interaction. Hence,

$$\text{Degree of } kawaii \text{ property} = f \text{ (interaction)} \qquad (1)$$

This leads to the structure shown in Fig. 13.

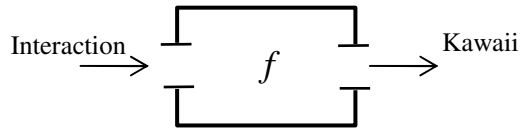Interaction $\longrightarrow$ f $\longrightarrow$ Kawaii

Fig. 3. Structure of the *kawaii* system

It is speculated that when people find a subject kawaii, they want interact with it and reinforce that interaction. What is called the "creation of kawaii-ness" or consti-tuting the "function of kawaii-ness (function f)" needs to be analyzed from the view-point of the kawaii system." An approach from the engineering aspect should be useful for specific system configuration. For instance, if you find bread that is shaped like a certain character kawaii, you may feel an unavoidable urge to pick it up and eat it. On the other hand, you may want to keep it without eating it. This is an example of the urge to engage in interaction.

6   Interaction and Sensitivity

There are two kinds of sensitivity: the sensitivity of the recipient and that of the send-er. Interaction occurs where the sensitivity of those two parties resonates. Sensitive deviation from this expectation causes a disagreement in intentions. Unless either the sender or the recipient has a degree of sensitivity, no interaction will occur. If the measure of the sender's sensitivity and the measure of the recipient's sensitivity de-viate from the expected value (the criterion for our finding something kawaii in gen-eral), two conditions occur: the subject is "not kawaii" or the subject is "very kawaii." As indicated in Fig. 14, "the lack of the property of being empathized with" is a suffi-cient condition of kawaii," "a disagreement in intentions" is a sufficient condition of "the lack of sympathism," and "a disagreement in intentions" is a sufficient condition for "interaction." In other words, it reveals the condition to be in the following inclu-sive relation: kawaii ⊂ lack of the property of being empathized with ⊂ disagreement in intentions ⊂ interaction. However, a detailed discussion of "necessary condition" and "sufficient conditions" related to those items is clearly needed.
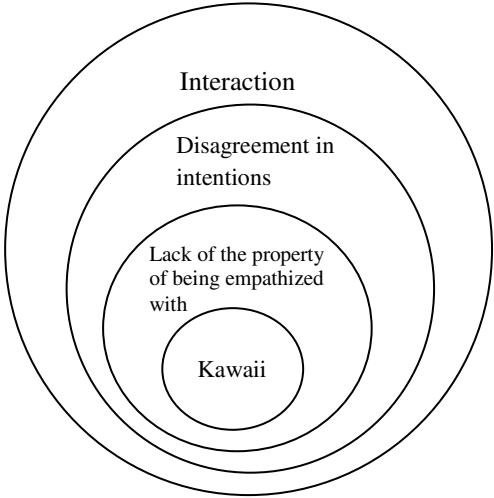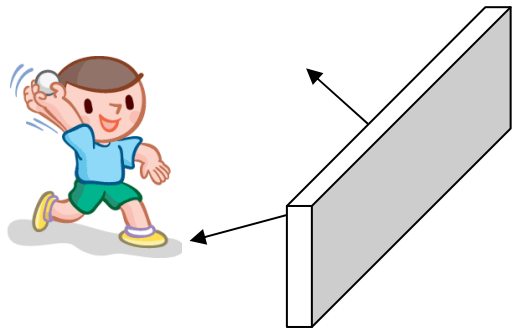
Fig. 4. Inclusive relation for *kawaii*

Fig. 5. There is a disagreement in intentions between the boy and the ball, since the ball bounces back in unexpected directions. Hence, there is interaction.

Interaction occurs in various situations. Take the case in Fig. 15, for instance. When a child throws a ball toward the wall, he throws it over and over because he finds it very interesting, since ball does not bounce back to where he would expect, but bounces back in unforeseen directions. This means there is a disagreement in intentions between the child and the ball. Hence, there is interaction. But if the child eventually realizes that the ball bounces back according to a physical rule, the instant he realizes this, he stops throwing the ball. The child has understood the reason why the ball comes back in different directions (which means there is no disagreement in intentions), and so that particular interaction has disappeared.

7   Conclusion

The author studied, from several viewpoints, the conceptual structure of the feeling of kawaii, which may be able to provide underlying basic knowledge related to the discussion of products and affective engineering. To begin with, a study from the viewpoint of interaction with characters (products) successfully clarified the relationship between kawaii-ness and interactivity.

Shannon-Weaver's model of communication was then applied to the transmission model between the sender (designer) and the recipient, and the author successfully proved that the model can be further evolved to a more general model that includes a feedback loop.

It is still necessary to develop an algorithm that conducts actual calculations using a definitional equation of the degree of interactivity. Application of an algorithmic approach to subjects that cannot readily undergo visualization by the name of interaction is an interesting task that remains to be tackled.

Since interaction occurs between the creator and the recipient, with a character serving as an intermediary, it is now clear that extending the definition of interaction to include visible objects is a natural process. Reinforcement of interaction means increase in entropy; otherwise, the kawaii property diminishes. Characters are evolved to create such a dynamic situation. Simply creating them without any follow-up will not do. In other words, the key point is that there must be interaction between the creator and the recipient, since the characters (products) must constantly evolve.

Analysis of kawaii from the viewpoint of Peirce's semiotics allows us to experience the sense of kawaii as a process of awareness in brand recognition within the concept of brand awareness. It therefore successfully provides a new aspect of kawaii research.

One of the major outcomes of this paper is the clarification of the inclusive relation of "kawaii lack of sympathism disagreement in intentions interaction." This result will has great potential usefulness for future research on kawaii. The most important task is to elucidate what kind of interaction creates kawaii.

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