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Lizette Reitsma & Elise van den Hoven

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Wrapping Cultural Values: using Social Embodiment as Stimulus in Designs

Lizette Reitsma[a*], Elise van den Hoven[b,c,d,e]

[a]Research Institutes of Sweden, RISE Interactive
[b]School of Software, Faculty of Engineering and Information Technology, University of Technology Sydney
[c]Department of Industrial Design, Eindhoven University of Technology
[d]Duncan of Jordanstone College of Art & Design, University of Dundee
[e]ARC Centre of Excellence on Cognition and its Disorders
*Lizette.reitsma@ri.se

Abstract: We present a case study in which cultural values were implemented in designs. We focus on *embodied* interaction – in which the body serves as an intuitive meaning-making tool. By stimulating people to move in a certain way through our designs, we hypothesised that they will perceive the value connected to the design.

The context was the giving and wrapping of gifts in the Japanese and the Dutch culture. Through the act of wrapping, values are connected to a gift; through the act of gift-giving those values are communicated. Two gift-wrappings were designed, each representing a value important for the wrapping and giving in one of the cultures.

We investigated whether the gift-givers and -receivers (Japanese and Dutch) could identify the values represented through the designed wrappings. The outcomes confirmed that, when designer and participants had the same cultural background, both Japanese and Dutch values were perceived.

Keywords: Embodiment, Dutch cultural values, Japanese cultural values; Interaction Design, Gift-giving, Gift-wrapping

1. Introduction

This work is situated within the field of design anthropology (Clarke et al., 2011; Lenskjold, 2011; Tunstall, 2011). Design anthropology explores how an understanding of cultural values can lead to exploration and the giving of form to future designs. In this paper, the term value is used as a collective inclination to choose a certain procedure above another (Hofstede et al., 2010). People's values are determined and influenced by their environment: it is the foundation of how one thinks throughout one's life (Hofstede et al., 2010). We see design anthropology as a valuable approach for interaction design; in order to get an understanding about the impact of values in the way people

interact with designs. More specifically we focus on *embodied* interaction – in which the body serves as a meaning-making tool.

Gift-wrapping is an act during which cultural values are, often implicitly, embedded in the wrapping, which could surface during gift-giving. How gifts are wrapped is culturally dependent: every culture has values involved in this, which tell us much about the mentality of the culture it comes from. Gift-giving and wrapping strongly involve social interaction: there are rules linked to the giving of gifts that depend on one's culture that guide the procedure of both wrapping and giving (Komter, 2003).

The case study presented in this paper focuses on both wrapping and giving. For wrapping: we identified the values involved in wrapping in the Japanese culture compared to the values involved in wrapping in the Netherlands. The values of both cultures were translated into two new ways of wrapping as to stimulate the user to behave in a manner conforming to those values. For gift-giving: we organised user enactments of gift-giving and evaluated the designed wrappings.

We chose the Japanese culture and the Dutch culture because of the differences apparent in the way each culture wraps gifts. However, the chosen values could have been from any other culture as well as another value from the same culture.

2. Background

According to Miller (2011) designs work as frames. These frames help people to behave in a manner proper to the context and situation, often without the user being aware of how the design has guided their behaviour. Our bodies are of major importance in our interactions with designs, since it is through our physical bodies that we make sense of the world and of our interactions with it (Djajadiningrat, et al. 2004; Hummels et al., 2006; Klemmer et al., 2006; Moen, 2005; Ross & Wensveen, 2010). To use this natural way of knowing and sensing in interaction design, Dourish (2004) proposed embodied interaction. Embodied interaction is based on the understanding that through our interactions with systems, and with each other through systems, we create and communicate meaning (Dourish, 2004). In embodied interaction, technology and objects take on meaning for their users through their embedment into systems of practice (Dourish, 2004). Through their aesthetics, designs can appeal to our senses and motor skills (Djajadiningrat et al., 2004). For this, both the appearance and action have to carry equal significance (Djajadiningrat et al., 2004).

Embodied interaction is based on embodiment. There are different notions to what embodiment is (Ziempke, 2003). In our work, the notion that is most relevant is the notion of social embodiment. With social embodiment, Barsalou *et. al* (2003) suggest that the states of the body (e.g. postures, arm movements, facial expressions) which arise during social interaction play central roles in social information processing. They state that embodiment can function both as a response and as a stimulus. We use embodiment as stimulus in the work presented in this paper. To give an example of embodiment as stimulus: Stepper and Strack (1993) let participants perform an achievement test either in an upright or a slumped posture after which they received feedback that they had done well. After the test, the participants were asked to rate their feelings of pride at the time. The participants who had been upright, experienced more pride than the participants who had been slumped, thus when people adopted a particular posture, it influenced their affective state (Barsalou et al., 2003). This can then result in the creation of meaning through interaction. By stimulating people to move in a certain way through our designs, we hypothesized that they will perceive the value connected to the design.

Hofstede et al.'s (2010) five dimensions of culture are often used to analyse different cultures and applied to interaction design (Lodge, 2007; Marcus, 2005). Although those cultural dimensions are useful for comparing cultures, they do not focus on specific cultural values. Schwartz's value framework (Schwartz, 1992) captures more cultural aspects than Hofstede's, since it focuses primarily on cultural values. This framework is also used in a comparable study where specific values were translated into interaction (Ross & Wensveen, 2010; Ross et al., 2007).

This work connects to Horn's (2013) suggested implementation of Saxe's cultural forms in interaction design as a means to activate existing patterns of social activity with associated cognitive, physical and emotional resources. Other work that is connected is Börütecene et al. (2016)'s study in which a cultural ritual becomes a foundation for interaction. They focussed on the hand gestures made during coffee cup reading rituals as a mechanisms for their interaction designs. In these studies the rituals or practices of cultural forms are central, rather than cultural values that are connected to these rituals or practices.

The study presented in this paper aims to find an approach to translate cultural values into designs that involve both perceptual and physical skills, in order to perceive the meaning of the appearance and action.

3. Process: From Value to Design

The design process of this case study intends to translate values found from literature (Japan) and from a user study (the Netherlands), into a design.

As a foundation for understanding the cultural values we use the Schwartz value framework. The Schwartz value framework describes human values by means of ten basic, interrelated, value types. The ten basic value types each contain several values which are connected to the types and are more specific. In total there are 57. Those values are used in the Schwartz value survey (Schwartz, 1992), in which they can be rated on a scale from -1 to 7 to indicate the importance of that value for that specific person/product.

In order to be able to translate the values into designs we needed a method that helped us describe the qualities of the interactions that took place during the gift-giving. This brought us to the Interaction Quality Framework, introduced in the work of Ross and Wensveen (2010). The Interaction Quality Framework contains several elements, each looking at movement from a different perspective. By going through all elements for a movement, the movement can be described.

3.1 Identifying Values

The Japanese tradition of wrapping is well known and has been studied by many ethnographers and anthropologists. Three values turned out to be important for wrapping (Befu, 1968; Hendry, 1989; 1995): *sacredness*, *purity* and *care* (which is manifested as *politeness*). In order to compare these three values with the Dutch values, the Schwartz value framework was used to identify corresponding values. As a result, for the Japanese culture, the values *devout*, *clean* and *politeness* were selected for the application in the continuation of this case study.

Since there appears to be no research done regarding the cultural values connected to gift-wrapping in the Netherlands, those values had to be collected using alternative methods. Through two connected activities; interviews in shops, and the selection, wrapping and giving of gifts by the researcher to people in her close social circle, after which interviews were held, the values were

determined. The main outcome was that in the Netherlands, a gift serves as a tool to show that you care for the other person and that you show how well you know the other person. There is also a playful value connected to it, that of raising the expectations of the other person. The three Schwartz
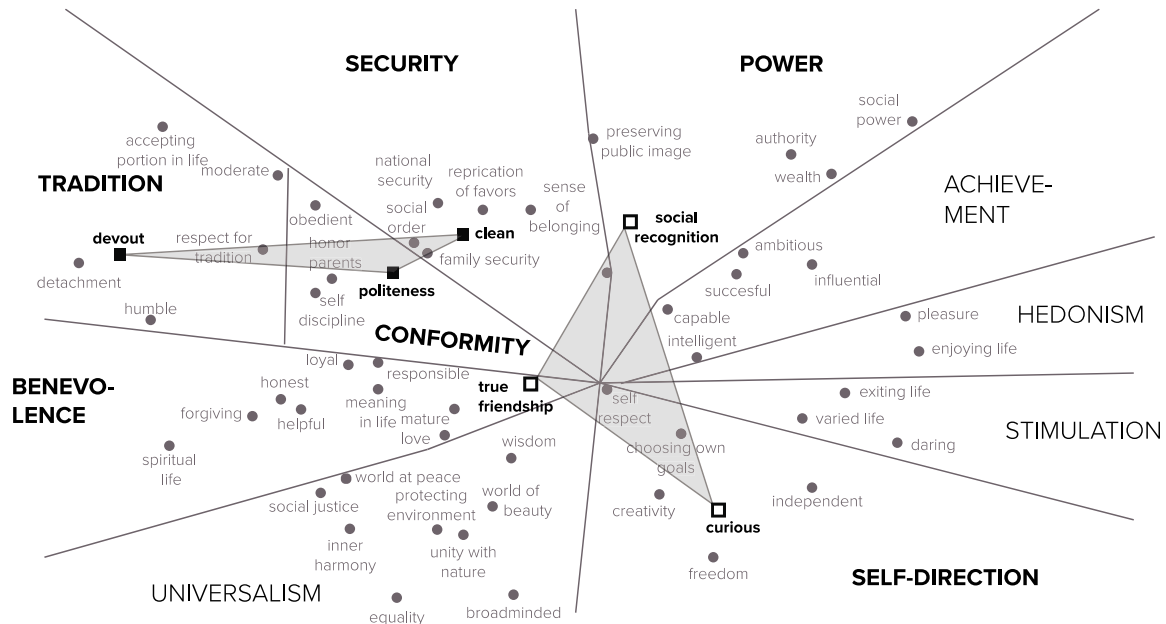

Figure 1. The Schwartz Value Framework. The filled, black squares show the Japanese values (devout, clean and politeness. The unfilled, white squares show the Dutch values (social recognition, curious and true friendship).

values that resulted from these findings were: *social recognition*, *curiosity* and *true friendship*.

By placing both the Dutch and the Japanese values in the Schwartz Value Framework, it can be noted that while the Japanese values all are clustered in the value group *conservation*, the Dutch values are spread amongst the other value groups (see Figure 1). One value was chosen for each culture in order to be able to intensively focus the design process on those values. We selected the two values *politeness* and *true friendship* to design for, because they both have *care* as a foundation, which makes them comparable, and they are most social by nature. We considered this social aspect of those values as an interesting dynamic when looking at gift-giving and wrapping as these activities also have a social foundation. We realise that the framing of those values suggests a certain closeness or distance in the relationship between gift-giver and gift-receiver. It is for this reason that when looking at the participants who were involved in the enactments and evaluation of this project, we aimed for couples who did know each other, but were not close on a personal level – like a work-

	Interaction Effort	Body Attitude	Shape Qualities	Kinespheric Reach	Initiative	External Connection	Body parts Involved	Interaction Dynamic Development	Comments
POLITENESS (Japanese)	Sustained time ■ Light weight ■ Bound flow Neutral space	■	Advanced, retreating (alternating) Sinking	■ Far	Giver is causing the reaction Receiver is reacting	Eyes ■ Contact via product	Arms Hands Head Eyes		Everything goes according to a set list of rules ■ ceremo-nial
TRUE FRIENDSHIP (Dutch)	Neutral time □ Strong weight □ Free flow Multiple space	□	Opening Enclosing	□ Near	Giver is causing the reaction Receiver is reacting	□ Body contact □ Embracing	Arms Hands Head Eyes		Relaxed free □ playful

Figure 2. The IQF of the enactment activity. The upper row lists interaction qualities based on the Laban movement system (Newlove & Dalby (2004)), including Interaction Effort, Body Attitude, Shape Qualities. The rows below specify the characteristics of each interaction quality, for the Japanese value Politeness and for the Dutch value True Friendship. Highlighted in with squares are the interaction qualities that strongly differ between the two values and thus cultures.

relationship. This way we aimed to not steer the interaction towards a certain value.

3.2 Interaction Qualities

The values *politeness* and *true friendship* were selected so that they could be translated into interaction. Since interactions are dynamic by nature, a form language was needed, which was derived from enactment activities. Those enactment activities were then analysed by means of the Interaction Quality Framework. During the enactments, six couples were asked to give each other a present both in a polite manner and in a way that shows *true friendship*. Each of the actors had a Dutch background and was in his/her twenties. The actors in the couples knew each other, but were not very close. Their type of relationship could be described as a work-relationship. The present was a neutral box, so as to not influence the interaction. All the participants gave and received the present in the two different ways. The entire process was video taped. The data that was captured with the enactment was analysed by means of the Interaction Quality Framework (IQF) (Ross & Wensveen, 2010). Each of the movie clips existing out of one gift-giving interaction. Each gift-giving interaction was described with the interaction qualities from the framework. This resulted in 12 descriptions of the *politeness* value and 12 descriptions of the *true friendship* value. Comparing those descriptions of the enacted values showed that differences in interaction qualities could be clearly recognised. We observed the main differences between the two values (as can be seen in Figure 2). For *politeness*, the interaction effort is lightweight (e.g. delicate and airy) and the flow is bound (e.g. controlled, careful). For *true friendship*, this interaction effort is heavyweight (e.g. powerful, with a firm touch) and the flow is free (e.g. released, liquid). The kinespheric reach of the interaction refers to the reach of space around the body during the movements. For *politeness*, this is far (e.g. the maximum reach possible for the body). For *true friendship* this is near (e.g. the minimum reach possible of the body). The external connection characteristic refers to the parts that connect the giver and the receiver. For *politeness*, this interaction takes place solely through the product; giver and receiver never touch. For *true friendship* this interaction takes place through the product, but also through body contact (e.g. hand on the shoulder, embracement). Further notable characteristics were that *politeness* had a ceremonial character, while *true friendship* had a playful character.

3.3 Final Designs

Then a design exploration was started, based on the interaction qualities resulting from the IQF. In order to make the designs comparable and evaluable, three variables were chosen: shape, material and the choreography of the giving and unwrapping. Those variables were chosen after considering the impact of variables on the perception of meaning, and their comparability. Choreography seemed like an important variable as it would facilitate for the social aspect of gift-giving. Shape and material were chosen because they have the potential to communicate qualities without having
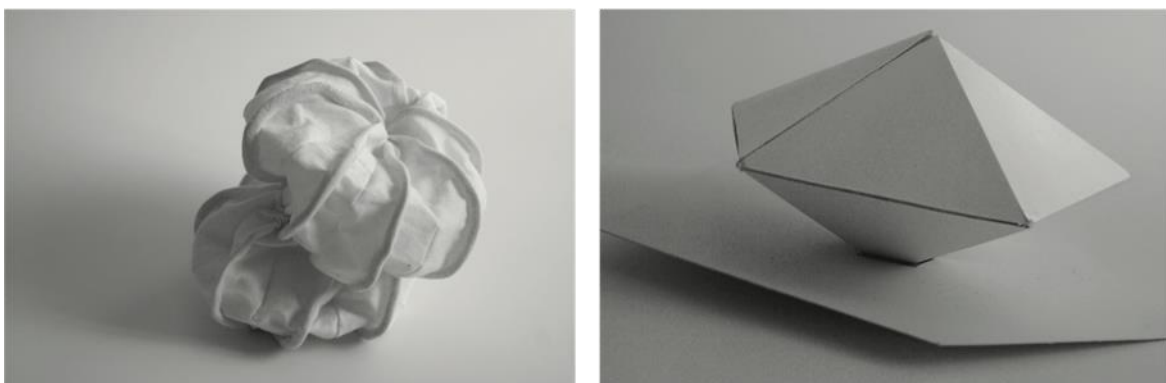

Figure 3. The true friendship wrapping (left) and the politeness wrapping (right).

strong cultural symbolism connected to them, as is the case with a variable such as color. For both values, different materials, shapes and choreographies were explored. Those explorative designs were introduced to different people during an informal evaluation session during which people were invited to pick up the designs and to talk about what they associated them with. Exploration showed that in order to let people perceive the values in an embodied manner, both subtle and aesthetically pleasing designs are of importance. Figure 3 shows the final designs.

Shape -The playful character; combined with the free flow of *true friendship* led to the shape of the *true friendship* design to be round, flexible and sturdy. The shape of the *politeness* wrapping was characterised by its fragile appearance, due to thin, straight surfaces and sharp edges to facilitate lightweight and bound flow.

Material use - The material used for the *true friendship* wrapping is a medium-weight cotton. This choice of material came from the heavyweight, the free flow and the playful quality of *true friendship*. The choice for the material used for the *politeness* wrapping - smooth card - was based on the characteristics connected to its shape, such as the fragile appearance, thin straight surfaces and sharp edges, all of which could be achieved using this material.

Choreography - The *true friendship* wrapping invites body contact and near kinespheric reach, because it has to be opened by means of the use of four hands. The *politeness* wrapping contains a tray, which invites far kinespheric reach. The opening of the wrapping by the receiver is clean: by softly pinching one of the sides between thumb and index finger, the wrapping opens.

3.4 Evaluation Findings

The main purpose of this evaluation was to explore whether it is possible to implement values in design that can be experienced through an embodied interaction. In order to evaluate whether participants experienced the values embedded in these designs, two user evaluations were performed – one with a Dutch group and one with a Japanese group. Both groups contained 10 participants, all women between the ages of 21 and 58. Only female participants were selected because in both cultures, the wrapping of gifts is predominantly done by women. The participants were then paired; each pair were familiar to each other beforehand but had a neutral relationship as to not influence their preference towards one of the wrappings (*politeness* when they are strangers, or *true friendship* when they have a close relationship). One person from each pair was selected to be the giver, the other the receiver. For each wrapping, the pairs enacted the process during which the gifts were handed over. In this process, the value the wrapping contained was not communicated to the participants.

This process was video recorded for analysis by means of the Interaction Quality Framework (IQF). After each enactment, the participants were asked to answer a Schwartz value survey on the task they had just performed. Because most Japanese withdrew from the evaluation, which will be discussed further in the discussion section, the results below are based on the evaluation with the Dutch participants.

Outcomes of Schwartz value survey - Before the study, the values *loyal, honest, helpful* and *curious* were appointed to have a strong connection to *true friendship. Showing respect, obedient, clean, tradition, moderate, humble* and *privacy* were appointed to have a strong connection to *politeness.* A one-tailed Wilcoxon test was applied to these values. A two-tailed Wilcoxon test was applied for the remaining values in order to test whether there were significant different values for both wrapping conditions. The results indicate that for the *true friendship* wrapping, the values *honest* ($p < 0.085$) and *curious* ($p < 0.072$) score higher compared to the *politeness* wrapping. The values *clean*

Figure 4. Comparison of Interaction qualities between enactment (left) and the evaluation (right) for the values politeness (above) and true friendship (below).

(p < 0.006) and *privacy* (p < 0.006) score higher for the *politeness* wrapping than for the *true friendship* wrapping. For the other values no differences were found between both wrapping conditions.

Outcomes of IQF - After analysing the interaction qualities for both wrapping conditions, it can be concluded that there is a clear difference between the two. Although the qualities were not as strongly exposed as during the enactment, they are relatively similar to the interaction qualities (see Figure 4). The *true friendship* wrapping condition showed: free flow, heavyweight and near kinaesthetic reach. The *politeness* wrapping condition showed: lightweight, bound flow, far kinaesthetic reach and contact through product.

4. Discussion & Conclusions

Through the qualities of the movements and experiences of the Dutch participants during the gift-giving, we can conclude that they experienced the values we tried to communicate through our designs. It suggests that our process towards implementing cultural values into designs has potential for applying it to interaction design. At least, when participants and designer have the same cultural background.

Because, where the study with the Dutch participants was successful, the approach we took for the evaluation with the Japanese women turned out to be inappropriate. We were wrong in assuming that the evaluation could be designed similarly for both the Dutch and the Japanese participants. The Dutch people completed the evaluation without difficulty or complaint, but the evaluation made the Japanese participants feel uncomfortable as it contained too much uncertainty. We should have avoided this by consulting experts on the Japanese culture prior to the evaluation, in order to get an understanding of the appropriateness of this evaluation for those with a Japanese background. What we also did not comprehend was that it might be seen as inappropriate for outsiders to change

traditions by adopting cultural values for new designs. Values are sensitive topics, since they lie at the heart of a culture (Hofstede et al., 2010). This is especially the case in cultures, such as the Japanese, where the protection of own traditions is of great importance to its members (Hofstede et al., 2010).

Acknowledging this gap in our methods is not the only learning point that we took from this event. We believe that the refusal of the Japanese participants to participate in the evaluation also gives us insights into attitude of the researcher and the position of design within existing social or cultural practices. The researcher was at the moment of this study in the beginning of her career and she had not yet learned to critically look at her own cultural background and how it influenced her designs and methods. Since most of the Japanese participants withdrew from the evaluation, most probably due to the aforementioned reasons, we were unable to compare the cultural backgrounds in relation to how the cultural values were experienced through the designed wrappings. In other words, the universality of the embodied values introduced remains to be explored. This, in order to enquire whether this approach is universally applicable or whether it is culturally dependent on how people experience the meaning interwoven in the designs. Also, it would be interesting to investigate whether the interaction qualities that arise from the enactments are universally connected to the cultural values. For this study, Dutch participants did the enactments, the researcher was Dutch and as a result the values embedded in the designs might be perceived *only* by people with a similar cultural background to the Dutch participants.

4.1 Application Area: Gift Wrapping and Giving

We see potential in the design approach as described in this paper. We predict that it can also be applied in a wider context, for example in the field of interaction design. When applied to interaction design, the product can be designed according to the interaction qualities of a chosen value. The product then becomes an actor who can receive and invite a certain intuitive interaction from the user. Through affordances and feedback (Vermeulen et al., 2013), a device can invite an interaction that contributes to the natural customs of a specific culture. If the value translated is one of the cultural values involved in the particular action of the user, the interaction might feel more natural to the user. To reach this, we propose the following design recommendations:

1 - *Being Aware of Consequences of Values*. By means of the interaction qualities that the product invites, the user unintentionally attaches meaning to that. We have to recognise that if a product is not designed with this in mind, it can also result in a user experiencing unintentionally added values. The evaluation as proposed in this paper could be performed on any interaction to explore which of the values people perceive.

2 - *Understanding the Value*. The value that is used as the foundation of the design should be thoroughly understood. This is important because without this thorough understanding it is difficult to make a useful and respectful translation of the value. The making of prototypes serves as a tool to establish an understanding of a value. This understanding should be evaluated by means of introducing those prototypes to users. What is also important to consider is to which values the translated value is connected and related. This last point is particularly important for the evaluation of the design, because it will give insight into whether the translation was successful.

3 - *Translating the Interaction Qualities*. Using interaction qualities for the translation of a value into a product was a method that worked well for us. The interaction qualities of a value give you a set of requirements that need to be considered for the translation of the value. Using enactment as the tool to gather the interaction qualities of a value also worked well: we found that a clear trend can be seen in interaction qualities when you ask several people to act out a certain value. Since the

probe itself can guide the actor's interaction, we suggest to choose a value-neutral object, such as a plain cardboard box.

4 - *Considering Subtlety*. It is important to consider subtlety and aesthetics when embedding cultural values. One should be careful not to overdo it. Interaction qualities vary only slightly between some values, but those small differences already can make a huge difference when interacting with the product. We created two different wrappings both containing a different value, and by means of a user study we found that both were experienced differently and people used different movement qualities for the giving of both wrappings.

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About the Authors:

Lizette Reitsma holds a PhD in Design. During her doctorate she focused on exploring dynamics of respectful co-design with Indigenous communities. She is interested in designing for cultures, design as tool for dialogue, co-creativity and research-through-design.

Elise van den Hoven is full professor in the Faculty of Engineering and Information Technology, University of Technology Sydney, and associate professor in the Department of Industrial Design, Eindhoven University of Technology. She leads the Materialising Memories research program.