

Designing Embodied Expressions.

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An intriguing aspect of designed objects is their expressiveness. After all, perceiving objects as expressive comes most natural, but accounting for why an object is expressive is quite another thing. Oftentimes, an object's expression may be seen as foremost motivated by social or cultural conventions. A hospital, for example, is recognized as being a hospital in part as the result of conventions defining what a hospital should look like. Upon nearing a big white building, brightly lighted from within and showing off many large windows, it doesn't take too much effort to figure out the building's purpose. However, next to being defined culturally, objects are also expressive in another sense. For example, a chair of great height may be perceived as proud or dominant. In these cases, understanding an object as expressive is arguably not, or to a lesser degree, the result of cultural conventions, suggesting, in addition to a cultural basis, a culture independent dimension of product expression. It is precisely this dimension of a product's expression that is most elusive and difficult to account for in scientific terms. Accounts of this dimension usually are of a descriptive nature, relating specific expressions to specific product characteristics. For example, product expressions like friendly and secure may be related to an object's rounded, organic form features. However, what is missing in accounts like these is an explanation of why specific forms connote the meanings they do. As a result of this explanatory gap, designers may be in doubt as to how to bring about a specific expression.

What is ignored in most accounts centered on product expression is the grounding of an object's expression in everyday experiences, and in particular the way in which these experiences are embodied. Perceiving an object as expressive, we argue, is in part the result of embodied interactions between people and their environments giving rise to everyday experiences. These embodied interactions supposedly underlie culture independent aspects of an object's expression since human bodies, constraining the kinds of interactions one may engage in, are similar across cultures. Insights in the relations between embodied experiences and product expressions not only provide designers with the means to account for why objects are perceived the way they are, but may also guide them in designing a desired expression. In a design study reported on in this paper, design students were instructed to design a product expressing a specific experience or feeling, for example dominance or involvement. In order to do so, the students were instructed to act out bodily interactions underlying the envisioned experience. For example, feeling involved with another person may be reflected bodily in a tendency to lower oneself to the same height and/ or to approach the person interacted with. Actually acting out these bodily interactions turned out to enhance the designers' awareness regarding the ways in which everyday experiences are embodied. Based on these bodily interactions, the products were designed. Not only did the designers indicate insights into the bodily basis of experience facilitated the bringing about of the desired expression; preliminary results also indicate the designed objects reflect the intended experiences. These combined findings lend support to our claim that exploring and actually feeling the ways in which experiences are embodied guide a designer in the creation and understanding of product expressions.

DESIGNING EMBODIED EXPRESSIONS

In our daily interactions in and with our environments, experiences arise in rapid succession. Overlooking the smooth surface of a table may give rise to thoughts and reflections, the sight of a Xerox machine may make one feel incompetent, and driving a beautiful car may be a highly rewarding experience. Obviously, the experience we have when interacting with products depends on a multitude of factors like the state of mind one is in and the context in which the product is interacted with; factors that are, in most cases, not in the hands of the designer. However, a designer has the means to influence a product's expression, referring to those characteristics the product conveys that are not part of it in a literal sense. For example, a chair may strike me as dignified, humble or trustworthy, just like a car may be experienced as adventurous, wild and pretentious. Expressive characteristics play an important part in the experience we have of a product as a whole. For example, feeling incompetent upon seeing a Xerox copier in part results from its highly complex and overwhelming outlook, e.g. its expression.

Regardless of the increasing number of books, papers and conferences on product experience and related issues, product expression remains a phenomenon ill understood. In general, accounts of products' expressive characteristics tend to stress either the role of formal features of products, as witnessed by various attempts to develop form grammars specifying the relations between form features of products and the connotations these give rise to (Muller and Pasma, 1996; Chen and Owen, 1997; Hsiao and Huang, 2001), or alternatively the role of the perceiver and his or her cognitive processes (Hsu et al., 2000). Notwithstanding the many interesting insights resulting from these studies, what is often overlooked is that experiences of all kinds, including product experiences, arise in interacting with our world (Dewey, 1934), and as such cannot be accounted for by solely focusing on the product or the user.

Arguably the most comprehensive account of the role of interactions between people and their environments in everyday experience is reported in the works of Lakoff and Johnson (1980, 1999) and Gibbs (1994, 2003). Of particular importance are their findings regarding the role of the body in these interactions. According to them, these findings enable us to account for why we experience expressive characteristics of our world, including expressive characteristics of products, the way we do. The purpose of this paper is to show how these findings may be of relevance for designers desiring to create a specific product expression.

EMBODIED EXPRESSIONS

Why do we understand an expression like *she's always looking down on others* as dealing with someone feeling dominant? And why is it that we may accuse a very withdrawn, introvert person of *shutting others out* or a person we feel we can't trust of *mental instability*? As shown by Lakoff and Johnson (1980, 1999), the use and understanding of these linguistic expressions is motivated by recurring bodily interactions. For example, the expression *she's always looking down on others* is motivated by interactions in which we experience power and dominance over others when literally higher, as when looking down on others from above. Therefore, we understand this expression as dealing with someone feeling dominant. Likewise, describing someone as an *unbalanced* personality and therefore not to be trusted relates to interactions in which we experience a loss of control and position when literally (bodily) out of balance. Accusing someone of *shutting others out* is motivated by interactions involving insides and outsides and consequent feelings of isolation and estrangement when being outside a space from others on the inside.

As shown by Lakoff and Johnson, interactions giving rise to similar experiences share similar structures, referred to as image schemas (Johnson, 1987). For example, interactions giving rise to a sense of security all involve a sense of being inside a space, whether it is a physical space, such as a house or a bed, or a metaphorical space constituted by, for example, family or friends. In other words, feeling secure is related to interactions involving a certain degree of experienced closure. As shown by van Rompay and Hekkert (2001) and Van Rompay, Hekkert and Muller (2004), products increasingly enclosing their contents, like jugs enclosing fluids inside, are experienced as more secure in relation to products providing less closure to their contents. These findings are consistent across cultures, suggesting the results are not solely due to cultural or learned meanings. In other words, we experience expressive characteristics of products in terms of our own embodied experiences arising in interacting with our world.

DESIGN STUDY

The findings discussed may be of relevance for designers desiring to create a specific product expression. If the experience of a specific expressive characteristic is indeed related to recurring embodied interactions sharing a similar structure, awareness of these similarities may guide a designer in the bringing about of the expression looked after. In order to test this prediction, a design study was set up centered on the design of a product expressing *involvement*¹. Twelve 4th and 5th year design students of Delft University, Faculty of Industrial Design participated in the study which consisted of four stages.

Based on the claim that specific experiences arise in recurring interactions, in the first stage the designers were asked to describe three

¹ The study was part of a larger study, also involving a control group, to be reported elsewhere.

interactions in which they had experienced *involvement*. In order to promote the designers' awareness of the role of the body in the interactions described, in the second stage the participants were instructed to reenact the three interactions in front of a mirror and describe bodily posture and reactions. Since recurring interactions giving rise to a specific experience supposedly share common, body related characteristics without which the experience would not arise, in the third stage the designers were instructed to look for, and express these characteristics in one collage. In the fourth stage the designers were instructed to design a product expressing *involvement* based on the acquired insights. After completion of the design task, the designers filled in a questionnaire assessing their judgment of the instructions provided.

Assignment

In the Netherlands, smoking in all train stations is prohibited since the first of January, 2004, except within a distance of 1.5 meters of public 'smoking objects', officially referred to as 'smoking pillars' (Figure 1) positioned on the various platforms. Although successful in communicating the conditions under which smoking is allowed, the smoking objects have been subject to widespread criticism. Most notably their dull and distant character has been a source of dissatisfaction among smokers.



Figure 1. Smoking pillar

Now suppose you are approached by the Dutch Railway Organization to design a new smoking object expressing *involvement*, instead of *distance*, towards smokers. How would you set about doing this?

Design Stages

Below, the instructions guiding the designers through the different stages of the design exercise are presented in short. The duration times indicate the estimated time required for each stage. On average, participants spent 4 hours on the overall design task.

Stage 1: Description of interactions giving rise to involvement (30 minutes)

In this stage the designers were instructed to describe three interactions taking place in the environments in which they had experienced *involvement*. They were specifically instructed not to describe daydreams, thoughts or reflections. Inspection of the results reveals that most descriptions reflect interactions between people, in most cases involving another person in distress and/ or in need of support. Exceptions are descriptions involving products (feeling involved towards a, for example, vulnerable product) or natural scenery (feeling involved in and with nature). In Table 1 examples of interactions described by one of the designers are presented.

Table 1. Examples of interactions described

- 1) *I felt involved upon hearing an accident happen and seeing a woman lying down on the street. I wanted to reach out and help & run away at the same time.*
- 2) *I felt involved with a relative during a party who was in pain. I did all I could to make sure she had a great time.*

Stage 2: Reenactment and characterization of the interactions described (45 minutes)

In this stage the participants were asked to reenact the interactions in front of a mirror and pay special attention to bodily posture and reactions. Following these reenactments, the participants were instructed to draw or write down the characteristic features for each of the enacted interactions.

Although in general the participants thought of the reenactments as inspiring and useful, some participants felt uncomfortable at having to perform in front of a mirror. Also, some of the participants thought it hard to characterize bodily posture and reactions as indicated by characterizations solely stressing facial expressions, ignoring the body as a whole. Characteristics most frequently mentioned across participants were closure, nearness, support, contact, and direction of attention. Characterizations of above-mentioned descriptions (Table 1) are presented in Table 2.

Table 2. Characterizations of interactions described
(Numbers refer to the descriptions presented in Table 1)

| <i>Interaction description</i> | <i>Characterization of bodily posture/ reactions</i> |
|--------------------------------|--|
| 1 | <ul style="list-style-type: none"> - Nearness: reaching out to woman - Closure/ Openness: open posture towards woman, closed towards environments - Rest/ Stability: controlled movements, reduction of chaos - Direction of attention: body turned towards woman, eyes focused on woman |
| 2 | <ul style="list-style-type: none"> - Direction of attention: body and eyes turned towards relative - Nearness/ Contact: trying to establish physical contact: hand on shoulders - Closure: offering protection, leaning over relative |

Stage 3: Expression of characteristic features in one collage (45 minutes)

In this stage, the participants were asked to express the body related characteristics the interactions have in common in one collage. Except for blank and colored A4 paper, no additional materials were provided. Also, no figurative elements were allowed.

Although thought of as inspiring by a majority of the participants, some participants felt restrained in having to express the *dynamic* characteristics derived in one *static* collage, while others failed to discern the similarities between the interactions described, resulting in collages lacking composition and straightforward expression. In Figure 2, a collage centered on derived interaction characteristics (Table 2) is presented.

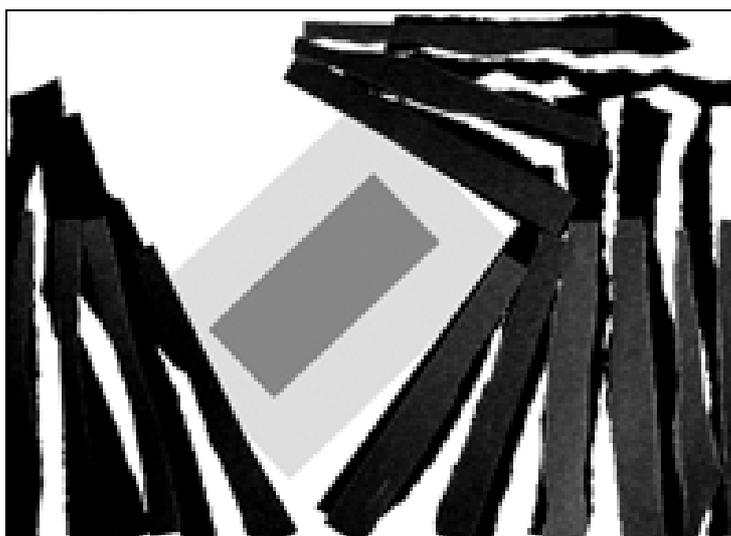


Figure 2. Example of collage

Stage 4: Design of a smoking object expressing involvement (2 hours)

Based on the acquired insights, the designers were instructed to design a smoking object. Apart from requirements specifying the object's maximum size (50 x 50 x 300 cm), other requirements stated no interactional elements like displays and buttons were allowed, the object should be realistic and in principle suited for real life usage, and be positioned on the ground plane. Participants were instructed to spend a minimum of 1 hour exploring different solutions after which the preferred solution had to be worked out in one final presentation sketch using provided 'black and white' markers only.

In reviewing the results, most notable is the difference between the ways in which the products express *involvement*. For example, both designs presented (Figure 3) stress *involvement* as arising from, among others, experienced closure. In Figure 3a (based on the characteristics presented in Table 2) closure is provided by the object's slightly curved elements, visually and physically guarding the user. In Figure 3b experienced closure results from taking in the position prescribed by the object (accomplished through its geometric shape and moderate height), further enhanced by the rigid demarcation of the smoking area (Figure 3b).

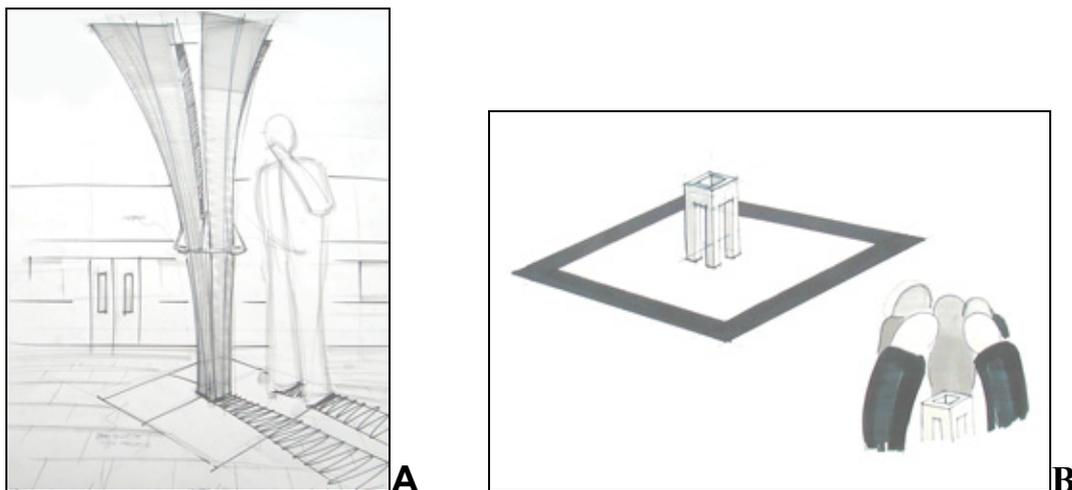


Figure 3. Examples of presentation sketches

Questionnaire

After completion of the design task, the designers filled in a questionnaire assessing the extent to which they had experienced the task as pleasant or unpleasant, and whether the provided insights had contributed to the design of a smoking object expressing involvement. Analysis of the questionnaires revealed 8 out of 12 participating designers had experienced the design task as pleasant and the instructions as contributing to the design of a smoking object expressing involvement. Three of the 12 participants expressed mixed feelings about the instructions and the overall design task, whereas 1 participant had experienced the task as unpleasant and the instructions as a burden.

Participants positive with regard to the overall design task and the instructions in particular stated the 'new' approach had guided them in getting

a grip on an otherwise elusive aspect of the design process. Negative remarks were mainly focused on the lack of coherence between the three interactions described as experienced by some of the designers. Consequently, these designers also thought it difficult or impossible to express the similarities between the interactions described in one collage.

DISCUSSION

The design exercise reported on in this paper was set up in order to assess the relevance for designers of insights into the relations between expressive characteristics of products and embodied interactions between people and their environments. Evaluation of the results of the design exercise and the questionnaire indicate that insights into these relations may certainly guide a designer in the design of a product expressing specific characteristics. However, the way in which these insights were incorporated in the design task, i.e. the four stages, are certainly open for improvement.

Most notably, the instructions for describing interactions and consequent characterization of the interactions described may have been too little specific, resulting in some cases in descriptions lacking coherence and as such hard to express in one collage. As elaborated on in our discussion of the work of Lakoff and Johnson, repeated embodied interactions giving rise to a similar experience share structural characteristics laid down in image schemas. As discussed, different interactions giving rise to *involvement* may be similar in the sense that they all involve a sense of *physical nearness*, *closure* or *contact*. However, to get at these similarities may require instructions a little more specific. For example, in order to account for the different meanings of the verb 'to stand', Gibbs et al. (1994) had people stand in different ways after which they had to rate the relevance of image schemas like distance, closure and balance. Since standing, especially standing on one's toes, involves a struggle to maintain one's bodily balance, balance, among other schemas, was rated very relevant with regard to standing. Based on these findings, Gibbs et al. motivate the use of the verb 'to stand' in a linguistic expression like *the law still stands* indicating a metaphorical struggle between the law and forces trying to bring it down. In a similar vein, we could have asked designers to indicate whether image schemas such as closure, distance (nearness) and contact played part in their enacted interactions. However, doing so would have undermined the designers' own creativity and limited the range of characteristics potentially derived from the interactions described. Arguably a middle way, providing enough structure to get at the interactions' structural similarities while at the same time leaving the creative and exploratory character of the design process intact, would be preferable.

However, regardless of the specific way in which the discussed insights may be best presented in order to be most useful for designers, it is our contention that reflection on ways in which expressive characteristics of objects are related to everyday experiences arising in interacting with our world is of crucial importance for designers interested in the ways in which their products give rise to (user) experience.

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