Under Cover and Close at Hand:
Embodied Metaphor in Packaging Design

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Designers and marketers of consumer products aim to communicate product benefits that connect to user needs underlying purchase behavior. Visual–spatial elements portrayed by packaging design are of particular importance in this context. Inspired by theorizing and recent studies in embodied cognition, this study explores the impact of three such image schemas (containment, distance, and common region) in the context of care products. To this end, packaging variants in which these schemas were systematically varied were created and presented to participants who filled out a questionnaire addressing product impressions and olfactory experience. Results show that these visual patterns not only can steer product impressions, but also can modulate olfactory experience, underscoring the persuasive nature of image schemas and their relevance to the design context.

Keywords – Symbolic Meaning, Embodiment, Image Schemas, Packaging Design, Product Expression.

Relevance to Design Practice – This research demonstrates that subtle visual design elements of product packaging can boost attributions of functional and psychosocial benefits to the product at hand, and may impact sensorial product experience.

Introduction

The idea that products, services, and the communications surrounding them should connect to deep-seated consumer needs is widespread. Underlying usage of social media and communication devices, for instance, there may be a need to belong (aptly addressed by Nokia's "connecting people" campaigns), buying a family car may be triggered primarily by safety concerns, and using Post-it® Notes (® 3M) may be an expression of control needs.

But to what extent can such needs be addressed by product packaging, a source of stimuli that usually receives limited consumer attention? Certainly, product packaging can have an impact on many dimensions of consumer experience. For instance, through selection of shape and color, a package can stand out on the shelf and attract consumer attention (e.g., a screaming red or atypically shaped package; Schoormans & Robben, 1997). Likewise, a visually coherent package design is easy to process and may boost appreciation of product and brand (Reber, Schwarz, & Winkielman, 2004; Van Rompay & Pruyn, 2011). And ever since the gestalt school and their framework of principles governing visual perception, it is also well acknowledged that factors such as balance, proximity, and closure organize visual experience with respect to any type of visual display (e.g., Arnheim, 1969; Locher, Stappers, & Overbeeke, 1998).

But can product packaging also connote symbolic meanings that connect to consumer needs underlying choice and purchase? Although research shows that product packaging can be a carrier of symbolic brand meanings (e.g., Van Rompay, Pruyn, & Tieke, 2009; Van Rompay, Fransen, & Borgelink, 2014), few studies have addressed the extent to which such meanings may find expression not just in "traditional" elements such as concrete product imagery, slogans, and product claims, but also in more abstract or subtle packaging elements related to composition and layout. Furthermore, although in marketing and design research, couplings have been made between specific shape characteristics (e.g., angularity) and symbolic meanings (e.g., toughness or masculinity) (Van Rompay & Pruyn, 2011), research has not addressed the question of how symbolic meanings are connoted through composition and layout of elements on product packaging.

Three elements in particular will take center stage, elements that are important for the communication of meaning from a psychological perspective, and which are also essential from a graphic designer's point of view: 1) relative distance among visual elements presented on a product package (i.e., distance or proximity), 2) the extent to which elements on a package are encapsulated by a visual container (i.e., visual framing), and 3) the extent to which visual elements are represented within the same region or are visually separated (i.e., common region or visual separateness). Hence, the purpose of this study is to explore to what extent desirable product attributes and related sensory experiences (e.g., does a package that connotes care-related

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meanings also inspire a more positive olfactory experience?) can be communicated through these visual elements. To this end, product packaging variants were created for a product in relation to which symbolic meaning communication is all-important (i.e., a baby-care product). Before elaborating on the details of this study, first we will present an overview of relevant research.

Image Schemas and Meaning Portrayal in Language and Design

When exploring relationships between visual–spatial packaging elements and meaning communication, of particular relevance are studies in cognitive linguistics addressing embodied metaphors and the role of image schemas therein (Grady, 1997; Johnson, 1987, 2007; Lakoff & Johnson, 1980, 1999). Image schemas are visual–spatial patterns in people's physical interactions in and with the environment, and figure prominently in figurative language use.

For instance, the schema for horizontal direction is grounded in bodily movement and bodily orientation, and captures the embodied logic that locations "ahead" are reached in the (near) future whereas locations "behind" have been crossed in the past. Because of this embodied logic, we intuitively understand linguistic phrases such as "He was far ahead of his time" or "If I fall behind, wait for me" as dealing with progression and delay respectively. Similarly, in our daily interactions with other people, smaller versus larger distances facilitate more intimate conversations, allow for the experience of bodily warmth, and pave the way for friendships to evolve. Because of this, we understand figurative phrases such as a "close" friend or a "distant" relative as dealing with intimacy and interpersonal warmth. And because we find that in our everyday interactions with spaces, borders such as walls, sheets, and car windows offer protection from weather conditions and other people, we understand what a song with the title "Cover Me" is about, and that a child "out of sight" is no longer "in" his mother's protective bubble, but "somewhere on the outside."

What these examples reveal is that image schemas are "used" to convey symbolic meanings in everyday language use. And as hinted at in the examples presented, the schemas for

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distance, containment, and common region are used primarily to convey affective, emotion-laden meanings related to interpersonal warmth, care, protection, and vulnerability. As these types of meanings are often at the center of marketers' and advertisers' communicative intentions with respect to care products, these schemas will be elaborated on next and subsequently applied in packaging designs for a product variant within this category (a baby-care product).

Distance

Not only are spatial concepts related to distance (e.g., near–far) among the first to develop in newborns, but from a developmental perspective, physical nearness is key to healthy emotional development as well (Bowlby, 1969; Cassidy & Shaver, 1999). For instance, mother–child interaction style (in which bodily contact or the lack thereof plays an important role) is generally considered a prime determinant of emotional maturity, reflected in, among other things, the ability to be intimate with others, empathic projection, and bonding. In addition, longstanding research findings show that people who share space and time (e.g., students sharing a room) generally like each other better, and consider each other more attractive, compared to people who are literally further apart (e.g., Festinger, Schachter, & Back, 1950). Not surprisingly, then, research shows that closeness, as opposed to distance, is generally framed in positive terms (Hurtienne, Stößel, Sturm, Maus, Rötting, Langdon, & Clarkson, 2010). The latter research showed, for instance, that constructs such as good and familiar are associated with arm movements "towards," as opposed to "away from," the body.

As already hinted at, image schemas are omnipresent in language use. For instance, in linguistic phrases such as "we were close friends" and "a distant stranger," the notion of emotional involvement is expressed in terms of being physically close to or far away from each other. This relationship (between "nearness" and "emotional involvement") is embodied insofar as being physically close to someone enables intimate communication and generates bodily warmth, whereas with increasing physical distance, communication becomes more difficult. A central facet of Grady's (1997) conflation theory holds that in the early beginnings of life these two domains are conflated insofar as being physically close and experiencing intimacy are part of the same interaction (a nurturing mother holding her baby close). Thus although later in life, feeling intimate with another person does not necessarily entail being physically close and vice versa, other consequences do persist, such as finding that intimate conversations fare better when conversation partners are physically close (Jourard & Friedman, 1970).

Of particular relevance to the present research, Williams and Bargh (2008) showed that even seemingly trivial distance cues may influence evaluations of intimacy-related constructs. For instance, in one of their studies, participants were primed with either spatial closeness or spatial distance by plotting an assigned set of points on a Cartesian coordinate plane. When primed with distance, participants reported lower levels of emotional attachment to family members and hometowns. Importantly,

such findings suggest that the relationship between nearness and intimacy is not merely a linguistic phenomenon, but actually structures the way we think and feel.

Most importantly for design purposes, the "distance prime" in the aforementioned study was of a visual–spatial nature, and is closely connected to design practice insofar as design decisions as to placement and grouping of elements are central to any (graphic) design undertaking. In the context of product packaging, proximity and distance relate primarily to the positioning of imagery on the product label. Specifically, graphic elements may either be positioned close to each other (e.g., all positioned near the label's center) or further apart (e.g., spread out and placed at the outer edges of the product label). The importance of this variable is also reflected in the gestalt principle of proximity, stating that elements positioned close together, as opposed to far away from each other, are perceived as being part of the same whole.

Following this line of reasoning, and taking into account the proposed couplings between physical nearness and related symbolic qualities, product packaging portraying key visual elements in close proximity (as opposed to packaging in which these elements are spaced out) should more readily trigger perceptions of intimacy, care and protectiveness.

Containment

Containment in everyday life (e.g., being inside a closed space such as one's office, house or car) is generally correlated with experiencing security, room for personal expression, and involvement with others. Hence, in language use one may talk about one's personal space or feeling "left out," and a poem drawing a metaphorical connection between intimacy and a warm blanket makes intuitive sense. In all these instances, being inside a space is likened to feeling safe, intimate, and emotionally expressive, whereas being on the outside is equated with isolation or vulnerability. Similar to distance, research shows that spending time together in a closed space can increase social interaction (Hatch, 1987; Oldham & Brass, 1979) and facilitate bonding by, among other things, paving the way for confidential conversations to unfold (Oldham & Brass, 1979).

In line with the above, Van Rompay, Hekkert, Saakes, and Russo (2005) showed that an everyday container providing higher degrees of enclosure to its contents (e.g., a "closed" jug) was more readily perceived as secure and informal compared to a container providing lower degrees of containment (e.g., an "open" jug). Similarly, Van Rompay, Hekkert, and Muller (2005) showed that chairs providing higher degrees of containment to their users were more readily perceived as emotionally expressive. With respect to product packaging or other visual marketing communications, the containment schema has not yet been explored.

Similar to how decisions regarding distance or proximity of visual elements are integral to packaging design, the same applies to visually framing elements within a visual container. On a perceptual level, providing a dedicated visual space to elements has the same effect as bringing them close together: they become part of the same structure and hence are perceived as belonging together. In that sense, both proximity and (visual) framing of elements within a container trigger perceptions of belonging or

togetherness, which form the basis for more abstract psychological perceptions. Hence, similar to how distance or proximity is used in language to reflect intimacy and bonding (e.g., "close friends"), the notion of containment is likewise used to express a sense of relatedness or goal-sharing as reflected in expressions such as "we are in this together" or "we are in the same boat."

Common Region

An important entailment of the image schemas discussed so far is that they also implicate a third visual gestalt: common region. That is, as distances between people increase, they become less and less part of the same (psychological) space but rather "worlds apart." Of course, in our everyday (physical) interactions, this is reflected by the fact that as people move away from each other, this often entails leaving the environmental setting they are in (e.g., exiting one's living room via a door to the hallway), whereby conversation partners no longer occupy the same space. Similarly, in the case of containment, being on the outside of the container entails occupying a different space than a person on the inside.

Hence, apart from the schemas for containment and distance discussed above, in this study we will also address a third gestalt—"common region" (Palmer, 1992, 2002)—referring to cases in which elements are seen as belonging together when they are located within the same bounded area. For instance, a recent study showed that the psychological reality of this schema can have far-reaching consequences for human decision-making. Mishra and Mishra (2010) showed that when they have a choice, people would rather have a potentially hazardous stimulus (e.g., a nuclear power plant) in a different village but at a smaller distance from their homes, compared to a situation in which the same stimulus was located in their hometown but at a larger distance (even though a city boundary offers no protection from the threat concerned). These findings suggest that effects of "common region" can override effects of "distance."

Hence, apart from exploring the three gestalts' individual workings and merits, we will also be concerned with the question of which visual means are most persuasive when it comes to the types of evaluations under discussion. Figure 1 presents a graphical overview of the notions discussed.
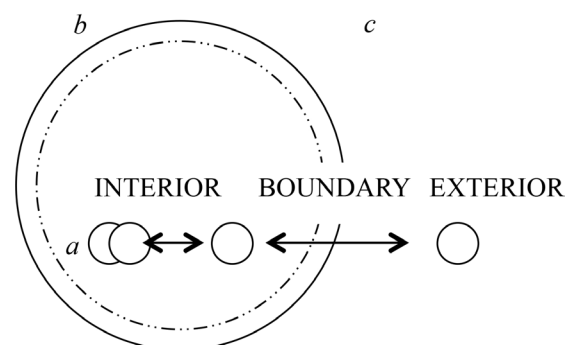

Figure 1. The three image schemas discussed: *a*) distance: no distance, small distance or large distance; *b*) containment: **minimal** (broken line) **versus maximum** (solid line); *c*) common region: together within container versus separated between inside and outside of container.

Current Research

It is apparent from the discussion presented so far that the image schemas presented may convey a sense of connectedness or disconnectedness that forms the basis for subsequent more abstract meaning attributions. With respect to packaging design of care products, such meaning attributions may either reflect concrete functional product characteristics (e.g., Does it protect the skin? Does it offer the proper type of care?) or psychosocial benefits/consequences of product use (Does it contribute to a sense of bonding, attachment, or connectedness?).

Although the foregoing does not inspire specific predictions as to how containment, distance, and common region could interact, it may well be the case that a perception of close proximity, for instance, is further enhanced by a visual container encapsulating these elements. Alternatively, greater distances between packaging imagery elements may be particularly salient when the elements are additionally separated by a visual container (i.e., no common region; one element is on the inside and the other on the outside of the container).

Finally, current research also seeks to explore effects of the image schemas under discussion on smell perceptions. Smell is an important element affecting purchase considerations for care products (Fenko, Schifferstein, Huang, & Hekkert, 2009). Research suggests that impressions imparted by packaging appearance may transfer to other sensory impressions (Becker, Van Rompay, Schifferstein, & Galetzka, 2011; Hoegg & Alba, 2007; Schifferstein & Spence, 2008). The rationale behind such transfer effects holds that a product's visual appearance (usually perceived first) generates expectations regarding other sensory characteristics such as smell and taste. These expectations bias perception such that smell, for instance, is readily perceived in line with impressions resulting from visual perception. Following this line of reasoning, a package for a baby-care product that visually communicates care and protectiveness should induce perceptions of product smell as soft or mild rather than pungent or chemical.

To test these predictions and additional research questions, a baby-care product was selected; a product that above all should protect and soften the skin (functional product characteristics) and appeal to a young mother's need for providing care and bonding with her newborn (psychosocial consequences of product use).

Method

Pretest

For the creation of stimulus materials, a standard variant of a fictitious brand of baby lotion (brand name: Petit Bébé) using Adobe Illustrator CS5 and SolidWorks 2010. On the label, which is colored white overall, a mother and baby whale are represented swimming among blue-colored bubbles. On the upper part of the package, additional product information is presented (translated from Dutch: *Foam bath: cleans, softens and protects*).

In order to assess the effect of distance between salient packaging elements, we included (in line with Figure 1) three distance levels (no distance, small distance, and large distance), and two containment levels (tight containment versus loose containment; see Figure 2). As can also be seen in Figures 1 and 2, the "no distance" and "small distance" levels are confined within the same bounded area (common region). Hence here we have four conditions: 1) no distance, solid boundary, 2) no distance, loose boundary, 3) small distance, solid boundary, and 4) small distance, loose boundary. It is only with the two "large distance" variants (see Figure 2) that our third image schema (common region) comes into play, as it is here that the two visually salient elements (mother and child) are separated by a boundary. Thus, by independently manipulating distance and containment (giving rise to an additional visual gestalt "common region," most notably in the "large distance, high containment" variant, Figure 2, upper-right image), we can assess the relative influence of the three schemas discussed on our outcome variables.

Translated to packaging design, the three image schemas were incorporated as follows (see Figure 2). In order to create variations in distance, mother and child either swim close together (partly overlapping; i.e., no distance), somewhat further apart (i.e., small distance), or still further apart (i.e., large distance). As for containment and common region, mother and child are either encapsulated (or visually separated when distance between mother and child is large) by a closed circle of bubbles, i.e., full containment, or merely by a few bubbles, i.e., minimal containment. Extensive pretesting (with these and precursors of the final variants, each time representing minor differences in terms of distance and number of bubbles used) revealed that these were the variants in which the manipulations were most convincing, and in which the mother and child were most clearly perceived as representing a human mother and baby.

Figure 2. Packaging variants. Top versus bottom row: maximum containment versus minimal containment. From left to right: no distance, small distance, large distance.

Apart from these variations, all other elements of the packaging were identical, resulting in a 3 (distance: none versus small versus large) × 2 (containment: minimal versus full) matrix of design variants.

Participants

Taking into account target group characteristics, 138 women (all mothers and/or pregnant) participated in the experiment. Their average age was 33 years (age range: 20–47 years). Participants were recruited in the city center of a large Dutch city.

Procedure

Participants were approached and asked to take part in a marketing study gathering shoppers' first impressions of a baby care product (bath foam). A short introduction at the beginning of the questionnaire informed participants about the product and the types of impressions under evaluation. They were informed that one question would address perceptions of product smell and that therefore a product sample (identical across the conditions) was provided. Next, they were randomly assigned to one of the six conditions. After filling out the questionnaire, including demographic variables and all dependent measures, participants had the opportunity to write down their name and e-mail address in order to win one of two gift vouchers worth €20.00.

Measures

Participants' responses (except for odor evaluation) were recorded using seven-point rating scales on which participants indicated to what extent they agreed with the statements (functional and psychosocial benefits). These measures proved reliable as indicated by good to excellent internal consistency scores (using Cronbach's alpha, α).

Functional Characteristics

Functional product characteristics were measured using eight items reflecting the extent to which the product cleans, protects, hydrates, and nourishes the skin. Example items are "I expect that this product will decrease the vulnerability of a baby's skin," "I expect that this product will hydrate a baby's skin," and "I expect that this product will be nourishing for a baby's skin" (α = .93).

Psychosocial Benefits

Four items measured the extent to which the product contributes to the relationship between mother and child and enhances product attachment as indicated by the statements "Using this product contributes positively to the bond between mother and child," "Bathing a baby with this product sets the stage for a special moment between mother and child," "Bathing a baby with this product enhances feelings of intimacy between mother and child," and "As a parent, I would feel attached to this product" (α = .91).

Odor Evaluation

An odor sample was provided after which participants were asked to indicate which attributes they considered descriptive of the product's smell (a procedure that makes intuitive sense to consumers as they generally find it difficult to rate complex flavors and smells on standard rating scales; Stevenson, 2009). Three attributes reflected positive characteristics (soft, mild, and pure), and three attributes reflected negative characteristics (pervasive, pungent, and chemical). For each construct (positive and negative smell), a measure was constructed by counting the number of attributes checked.

Results

Analyses of variance (ANOVAs) were conducted with distance (none versus small versus large) and containment (minimal versus maximum) as independent variables, and functional characteristics, psychosocial benefits, and odor evaluation as dependent variables.

Functional Product Characteristics

Starting out with an overall analysis of variance, results show a significant main effect of distance on functional product characteristics (F (2, 132) = 3.19, p = .04, η2 = .05), whereas the main effect of containment is not significant ($F < 1$). The former effect shows that more functional product characteristics were inferred in the "small distance" as opposed to the "large distance" condition (p = .01). The differences between the "no distance" and "small distance" variants, and between the "no distance" and "large distance" variants, were not significant (p = .15 and p = .25 respectively).

Table 1. Average ratings and standard deviations of the dependent variables as a function of containment and distance.

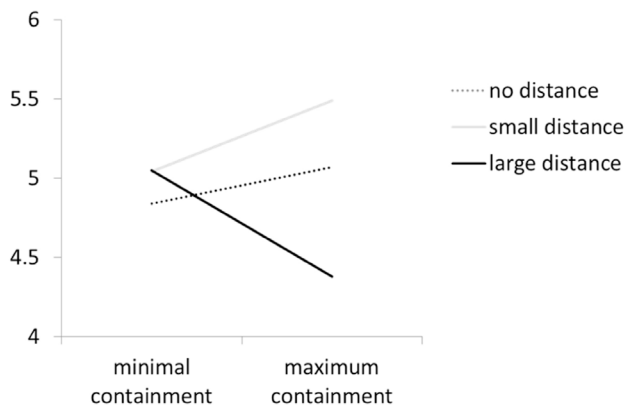| Containment	Distance	Functional Characteristics			Psychosocial Benefits			Positive Odor Evaluation			Negative Odor Evaluation		
		M	SD	n	M	SD	n	M	SD	n	M	SD	n
Minimal	None	4.84	1.91	23	3.43	1.51	27	1.21	1.02	24	0.71	0.86	24
	Small	5.04	1.99	21	3.71	1.29	21	1.57	1.17	24	0.48	0.87	21
	Large	5.05	1.68	24	4.10	1.04	24	1.38	1.01	21	0.38	0.65	24
Full	None	5.07	1.04	27	3.87	1.47	27	1.52	1.09	27	0.30	0.61	27
	Small	5.49	1.01	21	4.77	1.01	21	1.90	0.77	21	0.05	0.22	21
	Large	4.38	1.38	21	4.08	1.53	21	1.18	1.02	21	0.86	0.96	21

Figure 3. Effects of distance and containment on functional product characteristics.

Importantly, inspection of Figure 3 shows that the effect of distance is qualified by containment (F (2, 132) = 3.79, p = .03, η2 = .06; see Figure 3). In other words, the effect of distance (with a small distance generating more functional product attributions) only appears in the "maximum containment" condition (F (2, 132) = 6.42, p < .01), but not in the "minimal containment" condition (F < 1), as is clearly evident from Figure 3.

This latter finding indicates that it is not so much distance or containment in isolation that accounts for differences in terms of (functional) product evaluation, but visual separateness or "common region" (in the large distance condition only, mother and child are separated by the "maximum containment" bubbles). Inspection of Figure 3 further underlines this interpretation as it clearly shows that it is this condition only that is markedly different from the other conditions (p < .01). In sum, these findings show that visual separateness is the crucial variable here, accounting for the observed differences in ratings on functional product evaluation.

Psychosocial Benefits

Contrary to expectations, the effect of distance on psychosocial benefits of product use was not significant (F (2, 132) = 2.57, p = .08, η2 = .03). This time, the main effect of containment was significant (F (1, 132) = 4.72, p = .03, η2 = .04). The presence of a visual container on the package (maximum containment) resulted in heightened perceptions of psychosocial benefits compared to the 'minimal containment' condition. The interaction between distance and containment was not significant (F (2, 132) = 1.80, p = .17, η2 = .03).

Interestingly though, inspection of Figure 4 shows that the presence of a border (i.e., maximum as opposed to minimal containment) heightens evaluations in the "small distance" and "no distance" conditions, but that in the large distance condition (where mother and child are visually separated, i.e., do not occupy the same region), maximum containment does *not* heighten product evaluation (see Figure 4). This suggests that with respect to this variable, the presence of a visual container is the primary visual element, but that its positive effects are nullified when its presence creates visual separateness between mother and child.
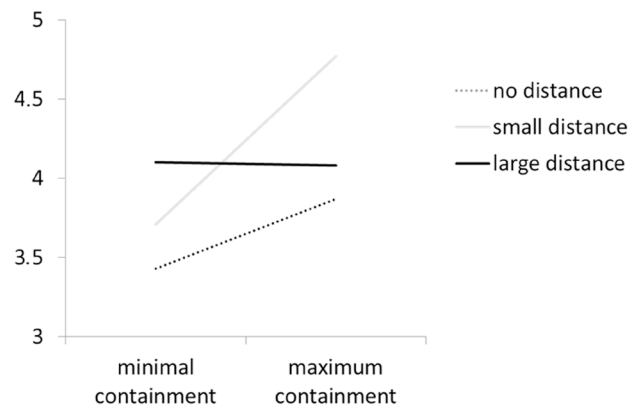

Figure 4. Effects of distance and containment on psychosocial benefits.

Odor Evaluation

An analysis of variance revealed a significant main effect of distance on positive odor evaluation (F (2, 132) = 3.51, p = .03, η2 = .05). Pairwise comparisons indicate that (in line with the results for functional product evaluation) participants in the "small distance" condition evaluated product smell more positively compared to the "large distance" condition (p = .01). The differences between the "no distance" and "small distance" variants, and between the "no distance" and "large distance" variants were not significant (p = .08 and p = .34 respectively). The main effect of containment on positive odor evaluation was not significant (F < 1), and neither was the interaction between distance and containment (F (2, 132) = 1.99, p = .14, η2 = .03), although it does show the same pattern as revealed for functional product evaluation (see Figure 5).
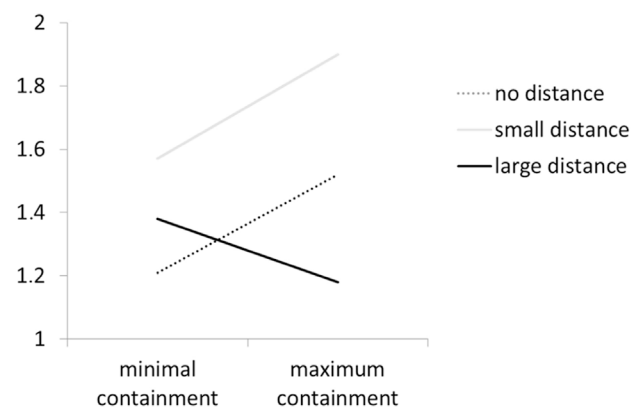

Figure 5. Effects of distance and containment on positive odor evaluation.

The effects of distance (F (2, 132) = 2.63, p = .08, η2 = .04) and containment (F < 1) on negative odor evaluation were not significant. However, this time the interaction between distance and containment was significant (F (2, 132) = 5.71, p < .01, η2 = .08; see Figure 6). While in the "no distance" and "small distance" conditions, a visual container (i.e., maximum as opposed to minimal containment) makes the scent come across as less negative (p = .05 and p = .06 respectively), in the "large

distance" condition (in which the "maximum containment" border visually separates mother and child), this effect is reversed (p = .03). Similar to the interaction patterns for functional product characteristics and positive odor evaluation, it is in this condition (see Figure 2, top-right variant) that olfactory experience is particularly negative, again showing that "common region" is crucial here.
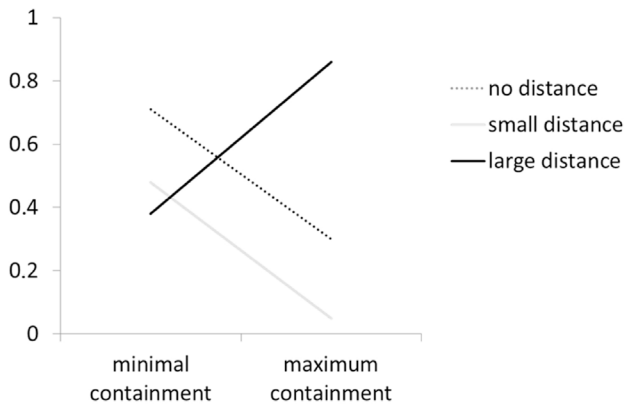

Figure 6. Effects of distance and containment on negative odor evaluation.

General Discussion

The findings presented stress the potential of visual representations of image schemas to highlight functional product attributes and psychosocial benefits. Across the findings presented, "common region" was most influential with respect to product evaluations, showing that a sense of visual separateness or disconnectedness between mother and child had the most negative impact on evaluations of the product under discussion (i.e., a product which should above all connote care and connectedness). Effects of common region were particularly apparent in the reported interactions where within the maximum containment condition, the differences between the small distance condition (in which mother and child occupy the same region) and the large distance condition (in which mother and child do not occupy the same region) stood out. Within the minimal containment condition, no such division of regions was apparent (i.e., only a few bubbles were present in the minimal containment condition), and by consequence, no significant effects emerged here.

With respect to psychosocial benefits, a main effect of the containment schema emerged, whereas no other effects reached significance. Although our findings do not allow for a definitive answer, it might be the case that the containment schema in particular is associated with emotionally laden constructs such as bonding, intimacy, and attachment (captured by the *psychosocial benefits* outcome measure), especially when realizing that the containment schema involves the creation of a closed world, shielded off from outside forces, thereby creating opportunities for a personal bond to develop (Hatch, 1987; Oldham & Brass, 1979). Importantly however, it was also here that "common region" was influential; the positive effects of a container in the "no distance" and "small distance" conditions

(in which mother and child occupy the same region) were absent in the "large distance" condition (in which mother and child are visually separated).

Of further interest is the finding that the "small distance" condition contrasted more clearly with the "large distance" condition, compared to the "no distance" condition. Although again speculative, this might relate to the notion that for proper emotional development, a moderate distance (allowing for exploration of the world within a certain vicinity of the carer) is arguably more productive compared to too large (i.e., too "loose") and too small (i.e., too "confining") a distance, a notion widespread in developmental psychology (Ainsworth, 1967; Bowlby, 1974; Rapee, 1997). An alternative explanation holds that (on a perceptual level) in the no distance condition, mother and child overlap and may not readily be seen as two independent entities but rather as a single whole.

Finally, the finding that expectations set by a product's visual appearance influence subsequent evaluations of products in other sensory modalities (in this case odor evaluation) confirms previous research findings (e.g., Becker et al., 2011; Hoegg & Alba, 2007; Huber & McCann, 1982). Our findings likewise indicate that attributes inferred by seeing a product transfer to evaluations resulting from input received by the other senses, a phenomenon referred to as cross-modal correspondence (Schifferstein & Spence, 2008). Such effects are most likely to emerge when product experience is limited and when product attributes are perceived in rapid succession (Deliza & MacFie, 2001; Garber, Hyatt, & Starr, 2001). Clearly, this was the case in the present research; the product was new as it involved a fictitious brand, and perception of product appearance and odor evaluation occurred within a timeframe of a few minutes.

Limitations and Future Research

The findings presented highlight the importance of paying attention to abstract, visual–spatial elements in product packaging in addition to more traditional marketing elements such as slogans, product claims and product imagery. In particular with respect to products positioned on abstract or symbolic product attributes, as was the case in the present research, incorporating image schemas into product design may prove particularly worthwhile. In part, this may relate to the fact that abstract product attributes are difficult to capture in concrete elements such as product imagery. And although such attributes may of course be highlighted in slogans, for instance, it is with respect to such "obvious" persuasive attempts that consumers may react with disbelief or skepticism (Obermiller, Spangenberg, & MacLachlan, 2005).

The image schemas at the basis of the present research, on the other hand, arguably operate on a more unconscious level, similar to how they do in language use (Lakoff & Johnson, 1980). Future research could explore the extent to which image schemas may also figure in product categories that are less prominently positioned in terms of symbolic or abstract benefits, and which do not generate as much consumer involvement. In the latter case, for instance, relatively subtle manipulations may not prompt

elaboration. Arguably, in such cases, more obvious renderings of distance, containment and common region through concrete visual elements (e.g., imagery depicting a mother holding her baby close), or a focus on these elements through traditional promotional elements such as claims or slogans, might be more effective.

Some limitations of the present study deserve mentioning as well. First of all, the packaging variants were presented on A4 paper with the odor sample presented separately. In future research, having actual contents inside a physical container would enhance the realism and ecological validity of research findings. Furthermore (as hinted at), the representation of mother and child in the no-distance condition (where they overlap) may not have been clearly perceptible, perhaps accounting for the less straightforward outcomes here. Also, effects of common region should be explored further. In the present research, "common region" was implied by the schemas for distance and containment in interaction. In follow-up research it would be interesting to explore different types of borders varying in solidity and thickness. For instance, a previous study (Van Rompay, 2014) showed that merely enhancing the visual salience of a solid line encapsulating an unborn child (see Figure 7) in an ad for a baby lotion enhanced ratings on skin protection and related qualities. Would the same manipulation also communicate higher levels of disconnectedness and isolation when two elements are separated across the inside and outside of the container?

Figure 7. Visual salience of a protective container.
Left: Highly salient thick boundary.
Right: Minimally salient thin boundary.

Finally, on a more general level, our findings are inconclusive with respect to the question of which image schemas trigger what types of meaning attributions. Findings from this and other research (Van Rompay, De Vries, Bontekoe, & Tanja-Dijkstra, 2012) indicate that image schemas can impact diverse aspects of product experience, ranging from (predominantly cognitive) luxury perceptions and price expectations to (more emotionally laden) expectations regarding bonding and relationship qualities. At the same time, our findings suggest that some schemas may be more suited to highlighting functional characteristics, whereas others may be better suited to triggering affective consequences of product use (e.g., the containment schema was most persuasive with respect to psychosocial consequences of product use, whereas the interaction patterns of the other variables showed that common region was most persuasive). Clearly, future research

should further pinpoint the range of consumer impressions and feelings that image schemas can affect, and further specify and explain how and why different schemas trigger different types of responses.

Acknowledging these shortcomings and the need for follow-up research, in the meantime our findings do attest to the importance of embodied meaning portrayal via image schemas with respect to diverse (multisensory) facets of product experience.

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