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Exploring the First Momentary Unboxing Experience with Aesthetic Interaction

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ABSTRACT Increasingly, the unboxing experience is regarded as a critical moment in product appraisal. As such, designers and companies should pay more attention to product packaging due to this increased interest in the momentary unboxing experience. In this study, we examine aesthetic interaction's influence upon emotional and semantic appraisals of the packaged product at the moment of unboxing. Three factors of aesthetic interaction were adopted and used in the design of packaging stimuli: freedom of interaction, interaction pattern, and richness of motor actions. The findings indicated that differences in aesthetic interaction between the three packaging designs evoked

particular positive emotions and delivered different semantic appraisals of the packaged products. Thus, the study provides design researchers and practitioners with an increased understanding of how aesthetic interaction can be leveraged in packaging design to enhance the unboxing experience.

KEYWORDS: packaging, unboxing, aesthetic interaction, momentary experience

Introduction



A popular trend in online videos called simply *unboxing* is emerging. This phenomenon is unusual as it is not clear why these videos have become popular, rarely containing practical information or review of packaged products (i.e. function, operation, usability). Rather, they focus on the process of *unboxing*. These videos are emerging from a wider range of products than might be expected; not only luxury and tech products (Becker et al. 2011). This implies that, rather than being limited to certain types of product, consumer, or context, the *unboxing experience* is emerging as important to many product categories. For example, according to a recent survey by Dotcom Distribution (2013), 52% of consumers are likely to make repeat purchases from a merchant that delivers premium packaging, illustrating how packaging design is now extending from the utilitarian to help define product identity and brand image.

However, although the unboxing phenomenon is now diverging to encompass a wider range of products, historically packaging design was mainly concerned with content safety and ecosystems that aimed to provide the proper preservation of the packaged product itself and its contents, as well as to have as little impact upon the environment as possible (Azzi et al. 2012). However, the increasing interest in the unboxing experience, as opposed to more conventional packaging design, appears to relate to a historical shift of focus from the technical and functional aspects (i.e. content safety) of the product proper to product styling in the 1950s and 60s (Raizman 2003, 306–325), to the styling of its packaging and finally to the design of the momentary process of removing the product from its packaging (Ellison 2011).

The growing trend towards unboxing as an experience in and of itself also has its roots in an ongoing competitiveness between companies who focus on connected products and devices (e.g. smart phones, digital tables), such as Apple Inc. (Heisler 2012) and Korea's Samsung Electronics. Apple, for example, holds a number of patents related to package design, and according to Heisler (ibid.), has a special packaging design studio occupied by hundreds of prototypes tested to determine how best to evoke a required emotional response: 'For Apple, packaging is more than how a product is nestled comfortably inside a box. Consequently, the user experience ... begins when a consumer picks up the box' (op. cit.).

If increasing interest in unboxing is indicative of the high level of emotion associated with this opening phase, product unboxing has the potential to provide positive emotional experiences (Desmet, Porcelijn, and Van Dijk 2007; Wei et al. 2014), much like opening a gift at Christmas or unwrapping a birthday present. In this regard unboxing is the starting point for the product experience and, per se, closely bound to emotional experience.

Nevertheless, few studies were identified to have focused on the significance of unboxing. To address this gap, two research questions were formulated:

- How do different types of unboxing experience influence emotional response towards the packaged products?
- How can designers embed emotional responses in packaging design through different unboxing experiences and what are the implications for package/product associations?

Unboxing Experience

Lazarrera (2015) claims that the unboxing experience adds value through the provision of memorable and sharable experiences. Unboxing has also been described as a moment for the evocation of emotion and raised expectation (Google n.d.; Pantin-Sohier 2009). For example, Dazarola et al. (2012) described ‘unboxing’ as particularly intense in emotional arousal, due to its ritual-like nature. Similarly, Patrick (2014), quoting Filip Weymans, director of marketing for labels and packaging at Xeikon, describes packaging as a trigger for personalized emotional responses.

According to the model of the Integration of Instances and Events of Product-Person Interaction (IEPPI) defined by Dazarola et al. (2012), a generic user packaging experience is composed of six phases in chronological order: Pre-acquisition, Pre-usage, Usage, No-usage, Conservation, and Retirement: users are firstly made aware of a product (Pre-acquisition), after which the product is transported home, unpacked, and installed for first use (Pre-usage). The product is then utilized in earnest, continuing to be maintained or stored, to malfunction or be repaired (Usage, No-Usage and Conservation), before final disposal (Retirement). According to the IEPPI approach, the stage of Pre-usage, in which transporting, unboxing, and installation occurs, has two unique characteristics:

- **One-time event:** happening only once. Once a product is unpacked, it will be the first and last such event during the product’s life cycle.
- **Short-term event:** transporting, unpacking, and installation are momentary experiences. They do not last long but may contribute to cumulative experience.

Despite a general lack of empirical research, some studies were identified within the scope of the unboxing experience. For example, Ketola (2005) describes unboxing through a typology termed Out Of Box Experience (OOBE), defined as ‘the initial experience a user has in taking a new product out of the box and setting it up in preparation for use’. The OOBE is further described through three main interaction events (Cathy 2014). The first involves visual appraisal of product representations, followed by visual appraisal of the physical product. Finally, multi-sensory appraisal of a product (Wang and Mu-Chien 2011) completes the OOBE experience. This final phase offers the user short-term physical interactions described as hands-on, non-instrumental, realized interaction, and explorative. As multi-sensory appraisal prioritizes the influence of interaction as the foundation for product experience, the current study adopts the approach to explore emotional response during unpacking.

Packaging Design as Aesthetic Interaction

The aesthetic experience accompanies both cognitive and emotional processes, consisting of aesthetic judgements and emotions (Kant 1790, 97–199). Desmet (2002) defines aesthetic experience as stimulated by a product’s features through sensory modalities. Here aesthetics is not seen as a means to satisfy bodily needs, but rather as a provocation of higher-level pleasures of the mind (Marković 2012). Therefore, aesthetic product interactions go beyond ‘looks good’ to extend to ‘feels good’ interactions (Hashim, Noor, and Adnan 2009). Nonetheless, much work on design aesthetics has traditionally focused upon the aesthetics of appearance, making a product look attractive (Locher, Overbeeke, and Wensveen 2010). Taking a definition of aesthetic interaction as centred upon feeling, the unboxing experience has the potential to influence aesthetic interaction, partly due to its infrequency (i.e. one time per product).

Thus, the current study adopts the concept of aesthetic interaction and applies it to packaging design in order to explore implications for the unboxing experience. However, the use of aesthetic interaction as a means to explore the unboxing experience is further complicated by the vagueness of the term. For example, Locher et al. (2010) define aesthetic interaction as the aesthetics of interactive systems, which implies aesthetics is tightly connected to context, use, and instrumentality. In addition, aesthetic interaction has been used to refer to ‘the qualities of a design that lead to the feelings, emotions, and the behaviours that result from these more bodily types of interactions’ (Eden 2010). Here Eden (ibid.) describes aesthetic interaction as consisting of entirely intangible properties, emphasizing aesthetics as not intrinsic to the product itself, but rather to the way users experience it (Lim et al. 2007).

The importance of aesthetics as a means to understand user/product interaction has emerged together with a shift in focus from a user’s behaviour and cognition to the user’s affective experience (Desmet

and Hekkert 2007). And, considering the user's tendency to retain only a limited number of specific events related to product experience when reflecting on product quality (Norman 2009), the product's first impression during unboxing has the potential to influence overall product evaluation. However, few empirical studies of affective experience during unboxing have been published (Ketola 2005). This is a problem because it is insufficient for designers to rely solely on their intuition and personal sensitivities when designing for affective unboxing experiences. Instead, a more objective understanding of aesthetic interaction during unboxing will provide the most opportune conditions for appropriate experiences (Desmet and Schifferstein 2012).

In defining aesthetic interaction as moving beyond the visual to encompass affective experience, a first step is to identify the elements and principles that drive more holistic aesthetic interactions. From the interaction design domain, four aspects were identified in a case-study on user interaction in website usage: the perceived usefulness, ease of use, hedonic quality, and visual attractiveness (Mahlke 2002). Apart from visual interaction between people and products, Desmet et al. (2008) further suggest five elements of interaction: force, sound, motion, texture, and performance. Likewise, Djajadiningrat et al. (2004) frame user/product interaction through the ways in which products appeal to both the senses and motor skills. Based upon a definition of interaction that encompasses multi-sensory interaction, Djajadiningrat et al. (ibid.) proffer three factors of aesthetic interaction that appear to align better to the current study's focus upon the unboxing experience (Table 1).

'Freedom of interaction' implies that users can express themselves, rather than follow a fixed order or single path. On the other hand, 'Interaction pattern' draws out the timing, flow, and rhythm between user action and product reaction, considerably influencing the feel of the interactions. For 'Richness of motor actions', operating and manipulating a product is a required interaction between user and product,

Table 1. Three factors of aesthetic interaction (Djajadiningrat et al. 2004).

<i>Factor</i>	<i>Description</i>	<i>Implication in design</i>
Freedom of interaction	Interaction with variety of orders and combinations of actions, rather than single path or interaction.	Product allows for expressive behaviour, not constraining the user.
Interaction pattern	Interaction pattern that spins out between the user and the product.	The timing, flow, and rhythm, like user actions and product reaction.
Richness of motor actions	Interaction that encourages the use of a wide range of motor skill.	Design by numbers. High degree of room to manoeuvre between actions required by product.

implying that the way a product encourages human-motor skills leads to aesthetic interaction.

For the current study, we adopted the three factors of aesthetic interaction (Table 1), to investigate how interaction through unboxing can influence emotional experience and product appraisal. However, rather than attempting to embed the three factors within the unboxing experience at different levels, we isolated them to evaluate their potential as stimuli for aesthetic interaction.

Methods

A research-through-design approach was adopted according to its definition as 'gaining knowledge through the process of designing, building and testing highly experiential prototype' (Frens 2006, 29). Three product packages were designed and prototyped to control for the application of the three factors of aesthetic interaction presented in Table 1.

Design Guidelines

As well as applying the three factors of aesthetic interaction, the designed stimuli were used to control for the influence of other packaging factors (e.g. graphics, colour, visuals). Three operational definitions of aesthetic interaction based upon Djajadiningrat et al.'s (2004) original factors were applied to the development of three packaging designs:

- *Freedom of interaction*: interaction occurring in various ways that are not limited by fixed order or sequence when a box is unpacked.
- *Interaction pattern*: coincidence of movement between a user's action and reaction with packaging. When opening a package, action and reaction are naturally coupled in timing and flow.
- *Richness of motor actions*: interaction is composed of a series of sequential procedures, having much to do with number of tasks requiring motor skills when unboxing.

An idea-generation session was conducted and three designs were chosen through unanimous consent between researchers considering their fit to the three types of aesthetic interaction. While the authors acknowledge the limitations of splitting the operational definitions into three distinct interaction types, we attempted to isolate the three to understand their influence within the context of the unboxing experience.

The Development of Experimental Stimuli

The same dimensions (140 × 140 × 120 mm) were applied to all three packaging designs (*Freedom of interaction*, *Interaction pattern*, *Richness of motor actions*). The designs were then prototyped in white, without graphical labelling. In doing so we realized the resulting packaging designs were specifically oriented towards our re-interpretation

of the factors of aesthetic interaction presented in Table 1. However, in common with in-the-lab studies, our aim was to isolate and explore the influence of the interactions during unboxing. The decision to exclude contextual and other product characteristics (e.g. graphics) was taken in order to achieve this.

Type A (*Freedom of interaction*) was filled with styrofoam, widely used in product packaging to absorb shock and protect the product (Figure 1). It was designed to encourage participants to extract the product inside the box in any way they wished without a fixed order or sequence. As such, although missing the expressive geometry that describes *Freedom of Interaction* within the literature (Djajadiningrat et al. 2004), Type A was designed to provide opportunities for unconstrained unboxing during product extraction. Type B (*Interaction pattern*) consisted of a pull-cord to the outer box connected to an inner carton containing the product (Figure 1). Type B was designed so as if the cord was pulled, the inner box rotated revealing an open surface holding the product. This interaction was designed to represent an interaction pattern. The timing, flow, and rhythm of reaction linked to the action of unboxing. Type C (*Richness of motor actions*) was composed of a series of sequential procedures accompanied by corresponding tasks required to remove the packaged product (Figure 1). The transformative axis of each element differed to encourage the use of motor skill, providing participants an unboxing experience with increased richness of motor action.

Measuring Emotional Response

A Product Emotion Measurement Tool (PrEmo) was used as non-verbal self-report instrument to measure emotional responses (Desmet 2005). PrEmo includes 14 animations representing positive (i.e. desire, pleasant surprise, inspiration, amusement, admiration, satisfaction, fascination) and negative (indignation, contempt, disgust, unpleasant surprise, dissatisfaction, disappointment, and boredom) emotions. A panel of five-point scales (0 to 4) appears to the right of each animation, with participants required to record responses according to the degree of correspondence with their own emotional state (4 – ‘feel strongly’; 3 – ‘feel this’; 2 – ‘somewhat feel’; 1 – ‘feel a little’ and 0 – ‘do not feel’).

Semantic Differential Scales

To further explore the influence of the three unboxing designs on first impressions towards the packaged product, Semantic Differentials

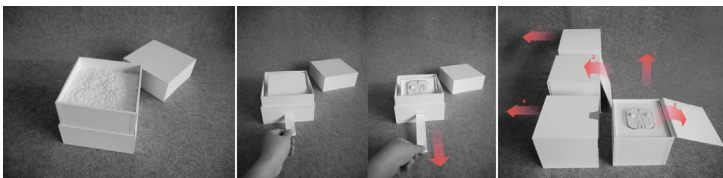


Figure 1. Three designed experimental stimuli: Type A (*Freedom of interaction*), Type B (*Interaction pattern*), and Type C (*Richness of motor actions*).

(SD) with 29 bipolar adjectives were used. The 29 bipolars broadly fell into four groups. Social values and position (SVP) relates to contextual factors. Usability and interaction (UI) refers to how the product experience is influenced by product function and use. Qualities of form (QF) indicate user response as related to product form. Personality characteristics (PC) describe the more holistic personality of products (Table 2).

To increase participant engagement with the 29 SDs, a research instrument was designed and constructed similar to a card-sorting method. On the right side of the instrument were 58 adjective word cards from the 29 SD bipolar adjectives, grouped in colour: blue indicates SVP, yellow UI, green QF, and red PC. Participants first chose a scale between two bipolar adjectives depending upon the extent to which they felt the adjective accurately described the packaged product. To encourage participants to answer honestly in evaluating each stimulus, a question was formulated to be used in the SD session: what meaning does the packaged product have considering the unboxing experience in terms of social value and position (SVP), usability and interaction (UI), qualities of form (QF), and personality characteristics (PC)?

Table 2. Set of 29 prescriptive grouped bipolar adjective pairs (Khalaj and Pedgley 2014).

<i>Social values and position (n = 5)</i>	<i>Usability and interaction (n = 8)</i>	<i>Qualities of form (n = 6)</i>	<i>Personality characteristic (n = 10)</i>
Contemporary – Traditional	Clear – Confusing	Elegant – Inelegant	Attractive – Repulsive
High – Low class	Easy – Difficult to use	Organic – Geometric	Aggressive – Submissive
High – Low technology	Safe – Dangerous	Ornate – Plain	Futuristic – Nostalgic
Expensive – Cheap	Comfortable – Uncomfortable	Innovative – Imitative	Quiet – Noisy
Global – Local	Reliable – Unreliable	Compact – Large	Mature – Immature
	Robust – Delicate	Symmetrical – Asymmetrical	Exciting – Calm
	Easy – Difficult to clean		Feminine – Masculine
	Practical – Impractical		Friendly – Unfriendly
			Extraordinary – Ordinary
			Interesting – Boring

Relations between Packaging Design and Product Type

Following the session on emotional response to packaging design, an interview was conducted to establish whether the three types of packaging design were associated with particular products or product categories. Associated products or categories were grouped in terms of product type through an affinity diagram and the product types illustrated based on frequency percentile.

Sample and Experiment Environment

A total of 45 participants ($n=45$), 22 males and 23 females, were recruited. Participants were undergraduate students from the authors' home institution. All were in their third or fourth year of study, with an age range of 23–27 years. The experiment was conducted at Home Lab located at the authors' institution and where a home-like environment is simulated.

Procedure

Participants were invited to Home Lab and the purpose of the experiment was introduced. The experiment was then conducted following five phases: unboxing, emotional response, break, first impression of product, and retrospective interview (Figure 2).

At the stage of unboxing, an assumed scenario was provided of a new product purchase. Participants were then given one of the three product packaging designs (Type A, B, or C) randomly to limit order effect, and asked to open and remove the packaging. Then, PrEmo was introduced and participants were required to record responses. The procedure was repeated three times for each participant. A two-minute break was provided before the 'first impression of product' session, where participants were asked to offer their first impression of the product through the SD sets. When measuring first impressions, participants evaluated the three stimuli together, marking their responses through the 29 SD scales for each of the packaging types, in a comparative way and in no particular order. A retrospective interview was followed with questions asking which kind of product suited the packaging designs (Figure 3).

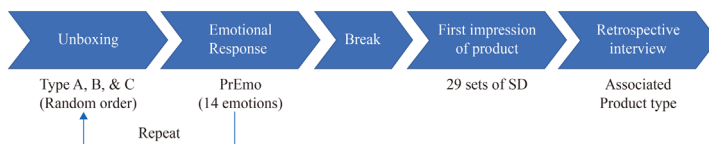
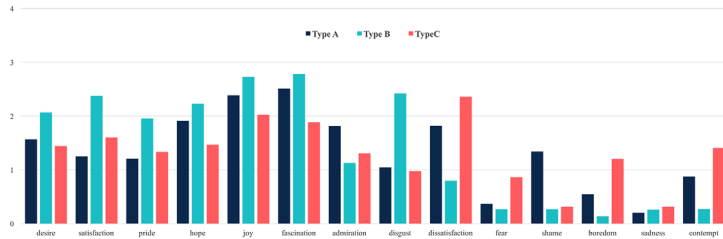


Figure 2. Experimental procedure.

Figure 3.
Example image of experiment conducted at Home Lab.



Figure 4.
Emotional responses to the three packaging stimuli (0: 'Not at all' and 4: 'Extremely').



Results

Emotional Responses

One-way multivariate analysis of variance (MANOVA) was conducted to examine relationships between the participants' emotional responses and the three packaging stimuli (Figure 4).

Among positive response items, statistically significant differences between the three packaging designs were found only for satisfaction ($F = 10.404, p < .01$), fascination ($F = 4.050, p < .05$), and admiration ($F = 15.915, p < .05$). In order to see the mean differences within the statistical significance, post hoc comparisons using Tukey's Honest Significant Difference (HSD) were conducted. The results indicated the Type B design as providing both increased satisfaction and fascination. Type A also scored high for fascination and admiration. Moreover, differences between the three packaging types in terms of negative response items were found to reach significance with the exception of sadness, and post hoc tests indicated Type C as arousing increasing negative responses compared with the other two packaging types. It may be that a series of sequential procedures required upon opening negatively influenced responses to packaging design, arousing feelings of dissatisfaction.

In order to establish which type of packaging scored high across positive and negative emotions, one-way analysis of variance (ANOVA) was conducted. In summary, it appeared that Type B attracted significantly increased positive emotion, while Type C increased negative responses. Likewise, Type C received significantly reduced positive responses, compared to Types A and B. It seems that the least favoured packaging design was Type C. In contrast, Type B provided both reduced negative and increased positive responses. It may be that the cause/effect relationship of the interactive pattern provided a more positive experience compared to the increased number of actions required during opening (Type C).

Appraisal of Packaged Product

To investigate whether the three types of aesthetic interaction influenced the participants' first impression of the packaged product, 29 bipolar adjective pairs consisting of seven-item Likert scales were used. Figure 5 illustrates the mean differences for each of the 29 adjective pairs.

To check for statistically significant difference in terms of semantics of packaged product, one-way ANOVA analysis was conducted. Participants perceived Type B as containing products that may be significantly more 'Contemporary' ($F = 9.25, p < .01$), 'High-tech' ($F = 19.44, p < .01$), 'High class' ($F = 13.86, p < .01$), and 'Expensive' ($F = 13.54, p < .01$). On the other hand, the participants assigned Type A broadly between two bipolar adjectives in terms of Social Value and Position (SVP).

In the semantic category for Usability and Interaction (UI), distinctive differences between the stimuli were also found. Type B was perceived more positively in terms of its usability and interaction: 'Clear' ($F = 16.937, p < .01$), 'Easy to use' ($F = 16.22, p < .01$), 'Safe' ($F = 11.35, p < .01$), 'Reliable' ($F = 15.37, p < .01$), 'Easy to clean' ($F = 5.06, p < .05$),

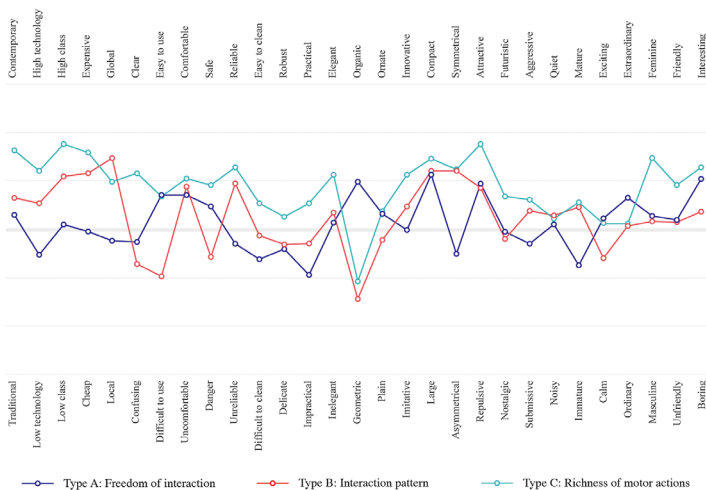


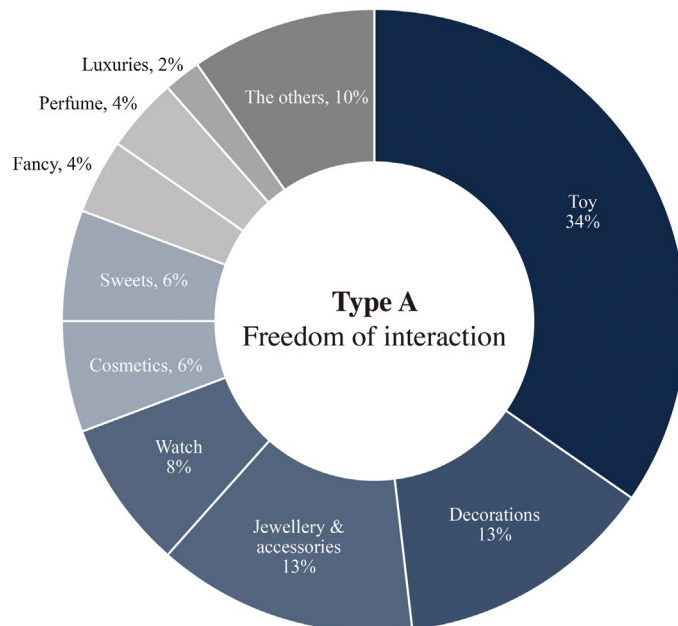
Figure 5. Comparison of semantic differential scales.

'Practical' ($F = 9.95, p < .01$). Participants also indicated negative responses towards Type C for some UI pairs: 'Confusing' ($F = 16.937, p < .01$), 'Hard to use' ($F = 16.22, p < .01$), 'Dangerous' ($F = 11.35, p < .01$). Type A was also assessed more negatively in terms of some usability aspects (i.e. 'Unreliable' ($F = 15.37, p < .01$), 'Hard to clean' ($F = 5.06, p < .01$), 'Impractical' ($F = 9.95, p < .01$).

Qualities of form (QF) also differed between product packaging types, with significant differences in four of the six bipolar adjective pairs. In Type A 'Organic' ($F = 37.39, p < .01$) and 'Asymmetrical' ($F = 25.29, p < .01$) were dominant. However, in the case of Types B and C 'Geometric' ($F = 37.39, p < .01$) and 'Symmetrical' ($F = 25.29, p < .01$) were prominent. In addition, participants perceived Type B as associated with the semantics 'Elegant' ($F = 4.2, p < .05$) and 'Innovative' ($F = 6.91, p < .01$). This would indicate Type A resulted in evaluation of a more dynamic form of packaging compared to the other two designs. However, the other two types of packaging, and their more standardized unboxing interactions, appeared to facilitate feelings of constraint and order.

Finally, properties of Product Aesthetic (PA) were measured through 10 SDs. For Type A, 'Immature' ($F = 9.06, p < .01$) was noticeably distinguished compared to the other two types of packaging. It was interesting that more positive characteristics were assigned to Type B: 'Attractive', 'Futuristic', 'Aggressive', 'Feminine' and 'Friendly' compared to the other two types. This may have indicated that a 'freedom of interaction' approach potentiated feelings of playfulness. However, this did not result in increased attraction.

Figure 6. Product types associated with product packaging Type A (*Freedom of interaction*).



Unboxing and Associated Products

Figure 6 shows the frequency percentile of product types associated with Type A. Among participant responses, the product category *Toy* was most frequently mentioned (34%). Interestingly, this was in line with the results of the appraisal of product semantics (i.e. Low technology, Impractical, Organic, Asymmetrical, Immature, Interesting).

It was also found that responses took a metaphorical form (Table 3). For Type A, participants appraised the structure between packaging and the inside product as, ‘Something seems to be buried’, ‘Something hidden on the ground’, ‘It seems just contained’, or even ‘Something seems abandoned’. The action of unboxing was also described through verbs such as, ‘Explore’, ‘Find’, ‘Take out’, and ‘Play’, and further discussed using phrases such as, ‘It was like treasure hunting’, ‘It was like hide-and-seek’, ‘It made fun of me’, ‘It felt like a surprising present’, and ‘It reminded me of drawing lots’. These responses may indicate feelings of play related to a childlike activity such as treasure hunting, hide-and-seek, or lucky-dip. This could explain why Type A was associated with impractical, organic, and asymmetrical qualities in the appraisal of the packaged product. Related to this result, Type A was described through experience related to ‘Curiosity’, ‘Interesting’, ‘Nervous’, and ‘Confusing’ (Table 3).

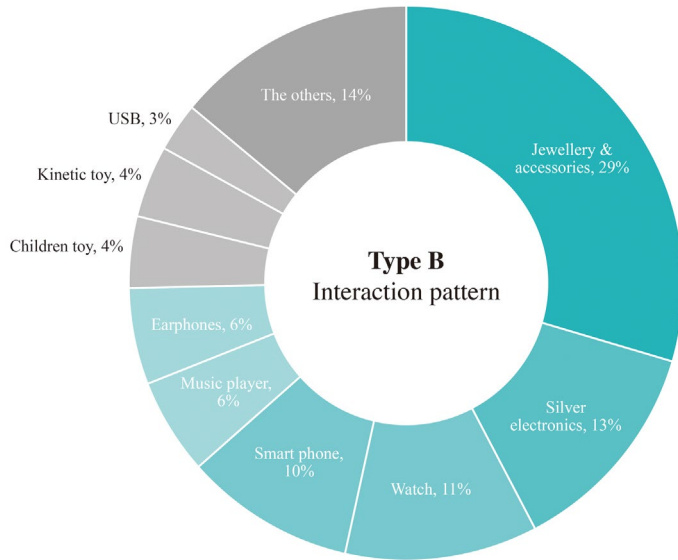
Results indicate that, in providing a freedom of interaction approach, participants experienced a more playful process of unboxing through searching and discovery, also stimulating associations to a toy-like product.

Figure 7 illustrates the frequency percentile of product types associated with product packaging Type B. According to the results, the

Table 3. Results of coding for product packaging Type A (*Freedom of interaction*).

<i>Metaphor between product and packaging</i>	<i>Unboxing verb (interaction)</i>	<i>Metaphor between pack- aging and user</i>	<i>Experience</i>
‘Buried’	‘Explore’ ‘Find’ ‘Take out’ ‘Play’	‘Treasure hunting’	‘Evoking curiosity’ ‘Interesting’ ‘A little nervous’
‘Hidden on the ground’		‘Hide-and-seek’ ‘Making fun of me’	‘Commonplace’ ‘Confusing’
‘Just contained’		‘Surprising present’	
‘Abandoned’		‘Drawing lots’	
‘Mystery’			

Figure 7.
Product types associated
with product packaging Type
B (*Interaction pattern*).



product category ‘Jewellery and Accessories’ was most dominant (29%).

Participants associated the packaging type with metaphorical terms such as ‘Something to be cared in the box’, ‘Something unpublished yet in the box’, ‘Something precious and valuable seems in the box’, and ‘The thing is veiled inside the box’. The action of unboxing was described through verbs such as, ‘Surprise’, ‘Propose’, and ‘Be exposed’, and further expressed with phrases such as ‘It is like something appearing on stage’ and ‘It associates me with fancy effect’. Related to this result, Type B was also described through characteristics related to high quality: ‘Look expensive’, ‘High expectation’, and ‘Luxurious’ (Table 4).

In the case of Type B, the unboxing interaction evoked particular emotions related to surprise and raised expectations. This could explain why product semantics such as high-class, contemporary, and expensive were used in the evaluation of product packaging Type B. These adjectives relate to jewellery, accessories, and, to a lesser degree, silver electronics and watches.

Finally, the product types associated with product packaging Type C are shown in Figure 8.

Participants described the relationship between packaging and the inside product with metaphors such as ‘It seems like tied up tight for something inside the box’ and ‘It is like something concealed in the box’ (Table 5). In terms of the action of unboxing, the product was described as ‘To be excavated’ and ‘To be operated’, with phrases used to express the relationship between packaging and user including ‘It was like taking an obstacle’ and ‘It was like solving a puzzle’ (Table 5). Experiences related to the packaging were described as ‘Annoying’, ‘Well-protecting’, ‘Boring’, and ‘Excessive’.

Table 4. Results of coding for product packaging Type B (*Interaction pattern*).

<i>Metaphor between product and packaging</i>	<i>Unboxing verb (interaction)</i>	<i>Metaphor between packaging and user</i>	<i>Experience</i>
'Cared'	'Surprise'	'Appear on stage'	'Look expensive'
'Unpublished'	'Propose'		'For special version'
'Veiled'	'Be exposed'	'Ballet'	'Novel and unprecedented'
'Princess waiting for prince'	'Unveil'	'Fancy effect'	'High expectation'
			'Fluttered'
'Precious and valuable'	'Pop-up'	'Waiting'	'Luxurious'
			'In advanced'
			'Impressive'
'Dressing table'	'Kinetic move'	'Show off'	
'Displayed'		'Look at me'	
'Jewellery box'		'Event'	
		'Go on the rides'	

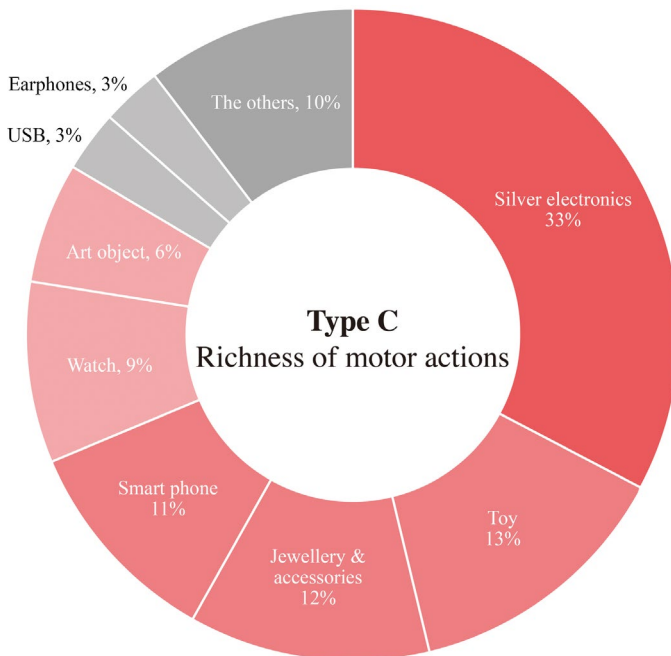


Figure 8. Product types associated with product packaging Type C (*Richness of motor actions*).

Table 5. Results of coding of product packaging Type C (*Richness of motor actions*).

<i>Metaphor between product and packaging</i>	<i>Unboxing verb (interaction)</i>	<i>Metaphor between packaging and user</i>	<i>Experience</i>
'Tied up tight'	'Excavate'	'Take an obstacle'	'Annoying'
'Concealed'			
'Well protected'	'Operate'		
'Confined in a room'			
'Shy girl'	'Take off'		
'Secret'			
'Sensitive'	'Repeat'		
'Sincere'			
'Holiness'			
'Matryoshka'	'Peel'		'Well-protecting'
	'Behave logically'		'Reliable'
			'Cost money'
		'Solve puzzle'	'Limited edition'
			'Extraordinary'
		'Deceived'	'Boring'
			'Unapproachable'
		'Bothering'	'Excessive'
		'Evoking expectation'	'Too complicated'
		'Adventure'	
		'Teasing me'	
		'Attached'	

These results appeared to resonate with findings from product semantic evaluation in that the complexity of the interaction resulted in some challenge for participants (i.e. confusing, difficult to use, dangerous).

Discussion

Aesthetic Interaction and Emotion in the Context of Product Packaging

Considering positive emotions such as hope, joy, and fascination generally scored higher than negative emotions across all three packaging types, results indicate the activity of unboxing itself can contribute to arousing positive emotions regardless of aesthetic interaction type.

This is in line with the studies by Desmet et al. (2007, 2012), indicating the opening phase as associated with high levels of positive emotion. In particular, this study implies motor skills as an element of interaction could play an important role in the aesthetic interaction of unboxing (Desmet et al. 2008; Djajadiningrat et al. 2004).

It was also revealed that aesthetic interaction during unboxing is closely related to particular types and intensity of emotion. For instance, Type B received the highest response in positive emotions, indicating its effectiveness in application of rhythm, flow, and timing to generate an interactive effect arousing positive emotions. More particularly, the way of unboxing Type B was intuitive yet unique in the sense that the inside box holding the product rotated according to participants' opening action. This may have been the core contributor, surprising participants and delivering an unexpected, yet positive, experience. However, results showed that, when considering interaction patterns, designers should approach novelty with care, supporting the work of Chavalkul et al. (2011), who also found that novel opening mechanisms may mislead users.

Differences between the three package types were exhibited most noticeably through the negative emotion dissatisfaction, in particular for Type C. In addition, the emotions 'boredom' and 'contempt' were also reported in assessment of Type C. This result implied the number of tasks required to unbox worked as a burden.

The Influence of Unboxing on First Impressions

By asking participants to assess product semantics through differential scales and define product categories suitable for each package type respectively, the influence of unboxing upon the participants' first impression of the product was investigated. Results showed that particular types of aesthetic interaction significantly influenced the participants' appraisal of the packaged product's semantics in terms of social values, with significant differences between the package types. For example, Type B was assessed as Expensive, High class and Contemporary compared to the other package designs. However, Type C was more negatively assessed in terms of usability (i.e. difficult to use, confusing). This might be due to the packaging structure consisting of four pieces requiring several opening actions. In contrast, Type B, with a more intuitive, easy-open method, was assessed as Clear, Comfortable, and Easy to use. On the other hand, Type B, with its rhythmic interaction pattern, was characterized as Elegant, Innovative, and Geometric in terms of qualities of form.

Finally, results indicated that particular aesthetic interaction in unboxing is associated with different types of product semantics in terms of product personality. For instance, the semantic adjective Immature was particularly present in Type A. Feminine and Attractive were exhibited in Type B, with Type C assessed as Calm.

Unboxing Type A was described through verbs such as Explore, Find, and Play, recalling an activity of treasure hunting or hide-and-seek.

With regard to product associations, *Toy* and *Decorative product* were mentioned with the highest frequency. Related to associations evoked by unboxing interaction in Type B (giving a gift, making a proposal), jewellery and accessories were mentioned with the greatest frequency. This might explain why *Elegant* and *High-quality* in terms of quality of form and *feminine* in terms of product personality were dominant in appraisal of Type B. That is, a relationship was identified between an interaction pattern approach to unboxing and jewellery as product type.

In case of Type C, the unboxing interaction consisting of several tasks, associations with 'Take an obstacle', 'Adventure', 'Well-protecting', even 'Solve puzzle'. These semantics may have provided an impression of the extraordinary and, as a result, the packaged product was appraised as 'Limited version' and 'Very delicate'. This may also be why electronic products were mentioned as the dominant product category. It could also be that a richness of motor skill approach to unboxing triggers associations with previous unboxing experiences.

Conclusions

Traditionally, visual elements of product packaging have been favoured as drivers to deliver brand image and product personality. However, unboxing occurring at the pre-usage stage is increasingly regarded as critical in potentiating an emotional response during product first impressions. As an attempt to explore the potential of packaging design, this study has examined the influence of aesthetic interaction upon the user's emotional response towards the moment of unboxing. Operational definitions of aesthetic interaction were defined and three experimental stimuli created according to design guidelines based upon three types of aesthetic interaction. Findings indicated that the aesthetic interaction of packaging had the potential to evoke particular emotions. Results suggest different unboxing interactions are an effective means to deliver particular semantic initial product appraisals. If designers aim to evoke a particular product emotion, results suggest packaging design also offers opportunities to achieve this. In particular, required motor skill has the potential to provide more novel unboxing experience (Te Vaarwerk et al. 2015).

Although the current study has indicated how types of aesthetic interaction influence the emotional experience of unboxing and appraisal of the packaged product in terms of product semantics, care should be exercised in the generalization of results considering the sample size. For the experiment stimuli, some packaging for ear-phones was selected and prototyped to investigate the influence of interaction types. If more products were considered, different in terms of product properties such as size and function, the reliability of results could be improved. Moreover, other interaction elements were not considered in the study such as touch experience on material or sound experience caused from friction and so on. Thus, further studies are required to examine how different types of aesthetic interaction influence various product properties or product categories in the context

of the unboxing experience. Despite such limitations, we lay the foundation for future work on exploring product packaging as a critical element of user experience at the beginning of the interaction between user and product.

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