Dynamism and congruency

A study on the effects of dynamism and congruency on consumer attitude and recall

Ruben de Ruiter I 1882503

r.s.deruiter@student.utwente.nl

University of Twente

Faculty of Behavioural, Management and Social Sciences (BMS)

MSc. Communication Studies - Marketing Communication (MSc)

First supervisor: Prof. Dr. Menno de Jong
Second supervisor: Dr. Thomas van Rompay

Date: 29-01-2019
Abstract

Purpose: This paper addresses the effects of dynamism and congruency between visual and verbal elements on consumers’ overall attitude and brand recall in a product package design context. This study tests the positive effects of dynamism due to increased engagement. Next, this research examines whether processing fluency due to congruency in meaning positively affects attitude and brand recall.

Method: An experimental study was conducted whereby participants were randomly assigned to evaluate a product design, based on their first impression. Eight different product designs were developed, divided over two product types. Each product type had two congruent variants (entirely dynamic and entirely static) and two incongruent variants (combination of dynamic and static elements). Automatically, each product type had one entirely dynamic and one entirely static variant.

Results: Results indicated that congruency does enhance brand recall. While no significant effects due to dynamism or enhanced attitude due to congruency were found. Furthermore, results indicated that visuals have a stronger effect on perceived dynamism than verbal elements.

Conclusion: The positive effects of congruency on brand recall are a contribution to the literature in the area of processing fluency. However, most findings are in contradiction with the current literature in the area of dynamism and congruency. A variety of studies showed the positive effects of both processing fluency and engagement on consumers’ attitude and recall. This study raises the question whether the effects of dynamism and congruency are as straightforward as is suggested by previous studies. An important factor is personal interpretation, which can differ between visual and verbal elements (Eco, 1976). Therefore, affecting the processing fluency by meaning or even undermining perceived dynamism. Another factor that might have influenced the effect of congruency is the presence of personal ‘need for structure’ as suggested by Van Rompay et al. (2009). Their study indicated that the effect of congruence differ between people’s extent of information ambiguity in everyday life.

Keywords: Dynamism, congruency, visual, verbal, engagement, processing fluency, product package design, brand evaluation, product evaluation, package evaluation, brand recall.
Table of contents

Abstract ....................................................................................................................... 1

1. Introduction ............................................................................................................. 4

2. Theoretical Framework ......................................................................................... 6
   2.1 Dynamic Imagery ............................................................................................ 6
   2.2 Congruence and Processing Fluency ............................................................... 8
   2.3 Research Model ............................................................................................... 10

3. Method .................................................................................................................... 10
   3.1 Research Design ............................................................................................. 11
   3.2 Pre-test and Manipulation ............................................................................. 11
   3.3 Instrument ........................................................................................................ 12
     3.3.1 Brand Evaluation ...................................................................................... 12
     3.3.2 Product Evaluation ................................................................................... 12
     3.3.3 Package Evaluation .................................................................................. 12
     3.3.4 Brand recall ............................................................................................... 13
     3.3.5 Perceived Dynamism ................................................................................. 13
   3.4 Participants ....................................................................................................... 13
   3.5 Procedure ......................................................................................................... 14
   3.6 Analysis ........................................................................................................... 14

4. Results .................................................................................................................... 15
   4.1 Perceived Dynamism ....................................................................................... 15
   4.2 Brand Evaluation ............................................................................................. 15
   4.3 Product Evaluation ......................................................................................... 16
   4.4 Package Evaluation ......................................................................................... 16
   4.5 Brand Recall .................................................................................................... 17

5. Discussion .............................................................................................................. 18
   5.1 Main Findings .................................................................................................. 18
   5.2 Theoretical Contributions .............................................................................. 19
   5.3 Practical Recommendations ......................................................................... 19
   5.4 Limitations and Suggestions for Future Research ........................................ 19
   5.5 Conclusion ...................................................................................................... 20

6. References ............................................................................................................. 21

7. Appendendices .................................................................................................... 24
   Appendix A: Stimulus material main study ......................................................... 24
   Appendix B: Overview used items per construct ................................................ 30
1. Introduction

In 1981, Sportlife entered the Dutch chewing gum market as the first sugar-free chewing gum provider. Their initial package was a very basic and abstract design. During the following years, Sportlife started associating themselves with extreme winter sports. In order to project their desired identity, a redesign of their package became unavoidable (see Fig. 1). Sportlife created a new package with more dynamic features such as the ice chunks flying towards you.

With this particular redesign, Sportlife did not only imply action with the moving ice chunks. It also implemented congruency in meaning through the metaphorical match between the slogan ‘smash mint’, the exploded ice and its overall positioning as a chewing gum provider for the extreme winter sports.

This example perfectly explains how dynamic elements can contribute to the positioning of a brand and visualize how a product package design has the ability to project certain messages to the public, subsequently differentiating itself from its competitors. Furthermore, the Sportlife example perfectly illustrates the communication aspects of a product package design. When a company succeeds in conveying a certain message or meaning through their design it will enjoy different corporate advantages such as better recognition, favorable behavioral intentions and more advantageous positioning (Orth & Malkewitz, 2012). Especially in saturated markets with messages from numerous competitors, a strong visual identity and clear recognition of a brands’ core values becomes vital (Karjalainen & Snelders, 2012; Stompff, 2003). This visual identity largely depends on the typically, clarity and information content of the logo and the product design (Orth & Malkewitz, 2008; Henderson et al. 2004; Henderson et al. 2003).

First of all, typicality can be described as how commonly a specific design is in a certain product category (Landwher et al. 2011). It is said that a person’s judgement is positively affected whenever he or she recognizes the characteristics of an object due to enhanced ease of information processing (Jacoby & Dallas, 1981). Second, clarity of a product design refers to the extent of coherence between visual elements such as colors, pictures and labels (Orth and Malkewitz, 2008; Henderson et al. 2003). It is known that a coherence between visual elements positively affects evaluation in both offline and online environments (Mosteller et al. 2014; Van Rompay et al. 2010;) and it has been shown that a congruency between verbal and visual cues also enhances brand evaluation (Cian et al. 2014). The third aspect of product design argues the amount of cognitive effort an individual has to put in, in order to process the information. The extent of effort is affected by design characteristics such as symmetry and complexity of colors, font text and images (Henderson et al. 2004; Orth & Malkewitz, 2008).

Taking all three aspects into consideration, it can be said that the evaluation of a product is strongly affected by the extent of coherence between features of a product package. This paper argues that a congruency between visual and verbal elements stimulates brand, product, and package evaluation due to the ease of information processing. In addition to the positive effect on information processing, it also increases the clarity of the company’s positioning in the market. The
Sportlife package is a great example of a clear positioning in the chewing gum market due to their product design. Within this study we use visual elements (running silhouette and still standing silhouette) and slogans as verbal elements (‘get in action’ and ‘keep calm’) to test the effects of congruency. These elements will be combined to create dynamic congruent designs, static congruent designs and incongruent designs.

When designed correctly, the function of a product package is not limited by creating a strong visual identity. It should also trigger consumers’ attention resulting in a stronger engagement with the product (Teixeira et al. 2012). This can be considered as another important function of a product design. Especially since the range of brands and products at the point-of-sale increases, drawing attention should not be neglected. This study tries to stimulate engagement by exposing consumers to ‘dynamic’ stimuli. Multiple studies indicated that perceived dynamism results in enhanced evaluation and can be manipulated by visual and verbal elements (Cian et al. 2014; Teixeira et al. 2012). Within this study, the influence of perceived dynamism on attitude was tested using different combinations of visual and verbal elements, creating either a more dynamic or static appearance.

This study also argues that dynamism and congruency have a positive effect on consumers’ brand recall due to the increased engagement and decreased mental effort. This paper examines the importance of a product package design and can contribute to a company on many different levels. The main purpose of this research is to expand the current knowledge on these subjects and subsequently provide managers with practical implications to increase business results through their package design. The central research questions are:

1. To what extent does a dynamic product package design in comparison to a static product package design positively influence consumers’ brand, product, package evaluation, and brand recall?

2. To what extent does a visually and verbally congruent product package design in comparison to a visually and verbally incongruent product package positively influence consumers’ brand, product, package evaluation, and brand recall?
2. Theoretical Framework

Within this theoretical framework the most important findings and definitions in the area of dynamism, imagery, congruency, and processing fluency will be elaborated. First, dynamism and its implications within this study will be addressed. Subsequently, the influence of dynamism on consumers’ attitude and brand recall. Next, the effects of congruency on consumers’ attitude and brand recall due to processing fluency will be mentioned. At the end, a visualization of the research models are added to create a better understanding of the research and applications of the used independent and dependent variables.

2.1 Dynamic Imagery

In general, there are two ways to induce perceived dynamism, by either verbal or visual cues. Verbal cues, such as a descriptive message, (“this is a rocket”) have proved to stimulate perceived dynamism. Vinson and Reed (2002) found out that perceived dynamism can be evoked by a descriptive text. In their study they performed an experiment with two groups. Both groups were presented the same illustration, however the description per group differed. One group thought that the illustration was a rocket when exposed to a ‘rocket’ description, while the second group had the description of a building (see Figure 2). The participants who had the rocket description, showed a higher degree of dynamism (upward motion) than the other group.

The second manner to stimulate perceived motion or dynamism is through the use of visual elements. A very common way of inducing motion is through ‘frozen motion’ (Vinson & Reed, 2002). Frozen motion can be described as capturing an object while in midst of its motion and has shown to induce perceived dynamism (Cian et al. 2014). Within their research, among others, they conducted three experiments testing three different logos. In each experiment they compared two logos (whereby one logo was captured in frozen motion and one that did not contain this characteristic). Within all three experiments, the logo that contained frozen motion was evaluated as more dynamic than its static counterpart. Besides the presence of frozen motion, the logos that were evaluated as more dynamic had even more similarities. The ‘dynamic’ logos had no visual friction with other elements of the logo. In other words, the amount of contact between the graphic elements was less present within the dynamic logos. A study by Kerzel (2002) found that visual friction between graphic elements decreases perceived movement. Subsequently, the dynamic logos stimulated participants’ engagement with the logo and their attitude towards them.

These positive effects are mainly caused by our visual system which gives us the ability to register the stimuli and subsequently imagine it moving (Hillstrom & Yantis, 1994). Lutz and Lutz (1978) indicated that our preference for dynamism has to do with the phenomenon called imagery and defined it as a cognitive event which involves visualization of a relationship or concept. A more concrete definition in this context was proposed by Cian et al. (2014) who described this cognitive event as the viewers’ sense of perceived movement.

![Figure 2. Vinson and Reed (2002), Experiment on the Influence of Verbal Context of Dynamic Imagery.](image-url)
The current literature implies that our imagination is stimulated when exposed to a stimulus that conveys any form of movement, due to the fact that our engagement increases. In 2012, Texeira et al. performed a study with a device which measured facial expressions. They found that positive emotions highly correlated with engagement, explaining the enhanced attitudes.

The presence of these positive emotions were also found during a study by Mzoughi and Abdelhak (2012). Within their study they tested the effects of visual and verbal rhetoric on emotions, attitude towards the proposed advertisement, and attitude towards the brand. They found significant positive effects on pleasure and arousal when participants were exposed to a visual in comparison to a verbal element. The verbal elements had a stronger effect on the negative emotion pain. However, their study indicated that verbal elements had a stronger effect on attitude towards the advertisement and brand than visual elements. McQuarrie and Phillips (2005) studied the effects of both verbal and pictorial metaphors in an advertising context. They stated that verbal rhetorical figures may be less effective than their visual counterparts when used in an advertisement. Especially when the consumer showed low involvement with the advertisement, visual elements increased the attitude of the consumer more than the verbal elements (Mzoughi & Abdelhak, 2012).

Furthermore, a variety of studies showed a positive influence of imagery on people’s recall. A study conducted by Paivio (1969) indicated that people’s recall increased when exposed to ‘high visual imaginable’ words versus ‘low visual imaginable’ words. However, during this study participants were instructed to use their imagination. Therefore, it cannot be said that unconscious imagination also leads to increased recall. Although it is assumed that imagination is stimulated when exposed to a dynamic stimulus (Marks, 1973). In his study he found similar results regarding people’s recall. Participants who reported a higher degree of visual imagery were more accurate during their recall process than the participants with less visual imagery. Both studies showed increased recall when imagination was stimulated.

In the footsteps of these studies confirming the positive effects of dynamism on attitude and recall, other studies showed increased engagement which results in a higher degree of persuasion (Karmarkar & Tormala, 2009). O’Keefe (2004) argued that persuasion is changing a person’s mental state, usually resulting in behavioral change. He added that attitude change is an important aspect of the decision-making process. Spears and Singh (2004) stated that although attitude and purchase intention are two separate dimensions, they do highly correlate with each other.

Thus, it can be assumed that engagement does not only positively influence brand evaluation, it also enhances product evaluation, package evaluation, and recall. Taking everything into consideration, four hypotheses were formulated in the area of perceived dynamism.

H1. A dynamic product package design positively influences consumers’ brand evaluation in comparison to a static product design.

H2. A dynamic product package design positively influences consumers’ product evaluation in comparison to a static product design.

H3. A dynamic product package design positively influences consumers’ package evaluation in a comparison to a static product design.

H4. A dynamic product package design positively influences consumers’ extent of brand recall in comparison to a static product design.
2.2 Congruence and Processing Fluency

According to the literature, people have a preference for both dynamic and congruent objects. With a congruent object, we mean an object which has ‘matching’ features such as a metaphorical link between text and image (Cian et al. 2014; Van Rompay et al. 2010) or even the text on a product package in combination with its shape (Van Rompay et al. 2009). The interpretation and meaning of these features are not limited by their ‘physical characteristics’ but are also often charged with symbolic or affective meanings (Van Rompay et al. 2009). A study conducted by Zhang et al. (2006) indicated that people evaluate a rounded logo as more harmonious and less aggressive than its angular counterparts. They argued that in comparison to the rounded object, angular objects have more confrontations with its surroundings, implying aggressiveness. Another common example of symbolic meaning is the integrated meaning of colors. Frank and Gilovich (1988) stated that the color black is highly related to feelings of evil and death, therefore stimulating aggression. While the color red is often associated with excitement and happiness (Soldat et al. 1997). This explains that colors can mismatch with each other based on their physical appearance but also on their symbolic meaning.

A variety of studies stressed the importance of visual and verbal congruency on consumer’s attitudes in different contexts. Van Rompay et al. (2010) found that when a perceived incongruency between text and image was shown, participants were in doubt. This incongruency made it difficult for them to form a clear impression of the product or service. These findings are in line with a study conducted by Sohn, S. (2017) and earlier by Mosteller et al. (2014). Sohn addressed the mediating significant effects of visual complexity and visual congruency on consumer choice satisfaction in an online environment. While Mosteller et al. (2014) also indicated positive effects of perceived congruent verbal information on consumers’ cognitive effort, online shopping experience and perceived quality of their decision.

Cian et al. (2014) tested the effects of congruency in an ‘offline’ context. They tested the effects of congruency between visual and verbal cues on logo evaluation (see Figure 3). The results of this study indicated that a congruency between visual and verbal elements positively affected logo evaluation. They assumed that consumers’ attitude was enhanced due to the metaphorical congruency between logo (forward movement versus backward movement) and the description (modern fashion versus classic fashion). All these results imply the positive effects of congruency. In 2009, Van Rompay et al. conducted a study with a comparable product as the products used in this study. They tested the congruency between the product shape (natural shape versus artificial shape) and the slogan (natural slogan versus artificial slogan). As expected, they found a significant interaction effect between product shape and slogan. Results showed that when the natural shape was combined with the natural slogan (or when the artificial product shape with artificial slogan), consumers evaluated the product more positive.

Figure 3. Cian et al. (2014), Experiment on the Influence of Congruency between Visual and Verbal Cues on Brand Evaluation.
This study proposes that a congruency in meaning or the physical characteristics between multiple features of an object enhances consumers’ attitude. Reber et al. (2004) argued that increased ease of information processing caused the increased liking. Alter and Oppenheimer (2009, p. 219) followed up on this by stating that “people similarly judge stimuli that are semantically primed, visually clear, and phonologically simple as more true than their less fluent counterparts”. These effects can be ascribed to the processing fluency theory (Jacoby & Dallas, 1981). This theory suggests that information processing is a cognitive and subject experience affected by a combination of the perceiver’s mental efforts and the complexity of the observed stimulus (Reber et al. 2004; Winkielman et al., 2003).

People’s mental efforts are, among others, influenced by the ease of associations that come to mind when processing an object (Lee & Labroo, 2004; Whittlesea, 1993). In 1993, Whittlesea tested the effects of fluency on evaluative judgements by manipulating the context of the stimuli. He combined words with a predictive context instead of a neutral context, thereby enhancing the congruency between word and context. As a result of this manipulation, the participants evaluated the words that were matched with the predictive context higher. This research strengthens the findings of Lee and Labroo (2004) who stated that a higher degree of congruency enhances processing fluency due to associations that come more easily to mind, decreasing mental effort and therefore positively affecting attitude. A recent study conducted by Xu et al. (2017) also indicated that increased mental effort negatively affects attitude. A more complex stimuli undermined the meaning of a visual design due to the increased cognitive effort, resulting in a more negative evaluation of the object. Although their research did not specifically focused on the processing fluency theory, their findings still suggest that the extent of perceived complexity has a moderating effect on individuals’ ability to clearly understand the meaning of the proposed stimulus.

Although a variety of studies showed the influence of our cognitive system on evaluation, Winkielman and Cacioppo (2001) ensured that the effects of fluency are not limited by explicit judgements. During their study they used a device which measured participants’ facial responses. Subsequently, participants were exposed to fluent and less fluent stimuli. The device showed more activation of muscles associated with positive emotions when exposed to a fluent stimulus.

Besides the positive effects of processing fluency on object evaluation, research showed increased brand recall as a result of processing fluency. Higham and Vokey (2000) showed that it is possible to produce a direct effect of prime identification by using matched primes. Thus, when features of an object are perceived as matching, our ability to remember or identify the presented object increases. Participants’ increased memory due matched primes can be attributed to ‘perceptual priming’ (exposure to one stimulus influences the evaluation of a following stimulus). People are unconsciously affected by the effects of perceptual priming. When stimuli are evaluated as matching, they are processed more fluent than when cues do not match with each other (Jacoby & Dallas, 1981). Matching cues lead to more and stronger associations with each other than non-matching cues, which results in better recognition. The enhanced recognition explains why fluent stimuli has a greater chance to be memorized. Taking everything into consideration, four hypotheses regarding the effects of congruency are formulated:

H5: A visually and verbally congruent product package positively influences consumers’ brand evaluation in comparison to a visually and verbally incongruent product design.

H6: A visually and verbally congruent product package positively influences consumers’ product evaluation in comparison to a visually and verbally incongruent product design.

H7: A visually and verbally congruent product package positively influences consumers’ package evaluation in comparison to a visually and verbally incongruent product design.

H8: A visually and verbally congruent product package positively influences consumers’ extent of brand recall in comparison to a visually and verbally incongruent product design.
2.3 Research Model

In order to create a clearer view of the proposed concepts, two research models (Figure 4 and Figure 5) have been added to the theoretical framework. For simplification reasons, this research is divided into two research models. The first four hypotheses are visualized in Figure 4. This research model visualizes the study regarding the effects of perceived dynamism on brand, product, package evaluation and brand recall.

The last four hypotheses are included in Figure 5. Within this research model the effects of processing fluency on brand, product, package evaluation, and brand recall are tested.

**Figure 4. Research Model effects of Dynamism.**

**Figure 5. Research Model effects of Congruency.**
3. Method

3.1 Research Design
An experimental study was conducted during this study. In this study the influence of perceived dynamism on brand, product, and package evaluation and people’s brand recall was tested. Besides the influence of perceived dynamism, the influence of processing fluency due to congruency on brand, product, package evaluation, and people’s brand recall was also tested.

Both effects, perceived dynamism and congruency, were tested with the same combinations of slogans and pictures. This study tests the positive effects of imagination, stimulated by motion on our dependent variables. Based on previous studies, the positive effects of congruency due to enhanced processing fluency are also implemented within this study.

In order to rule out any product type related effect on the dependent variables, two different product types were designed, a yogurt drink and a fruit bar. Furthermore, these product types have some associations with sports, activity etc. which makes them perfectly suitable for this study.

3.2 Pre-test and Manipulation
A pre-test was conducted (with the same yogurt drink packages as used in the main study) to test the presence of perceived dynamism and perceived congruency within the manipulations. Each design contained either a running silhouette (dynamic variant) or a still standing silhouette (static variant), see Figure 6. These silhouettes were accompanied with either a dynamic slogan ‘get in action’ or a static slogan ‘keep calm’. All possible combinations were designed. This resulted into four different designs (see Appendix A), two congruent variants (entirely dynamic and entirely static) and two incongruent variants (combination between dynamic and static elements).

During the pre-test, 48 people evaluated the designs on their dynamism and congruency. Dynamism was measured with a construct consisting out of three items. These items were measured with a 5-point Bipolar scale, whereby the participants had to indicate to what extent the description (static-dynamic, passive-active, and calm-movement) matched with the presented design. See Table 1 for an overview of participant’s average rating of dynamism divided per dynamic or non-dynamic design.

Figure 6. Active and Static Silhouette.
The pre-test also tested the presence of congruence per design with the question “to what extent do you find the silhouette and slogan matching?”. A 5-point Likert scale was used to measure the extent of congruency between the silhouette and slogan. The average rating of congruency per manipulation is shown in Table 2.

The pre-test showed significant differences in perceived dynamism between the dynamic and non-dynamic designs. Furthermore, significant differences were found between the congruent and incongruent manipulations.

### Table 1
Pre-test Results: Evaluation of Perceived Dynamism per Dynamic Packages and Non-Dynamic Packages.

<table>
<thead>
<tr>
<th>Package Design</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Package</td>
<td>4.33</td>
<td>.57</td>
</tr>
<tr>
<td>Non-Dynamic Package</td>
<td>3.03</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Note: sig. 0.000, Z-value -6.726

### Table 2
Pre-test Results: Evaluation of Perceived Dynamism per Incongruent and Congruent Packages.

<table>
<thead>
<tr>
<th>Package Design</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congruent</td>
<td>3.91</td>
<td>.09</td>
</tr>
<tr>
<td>Incongruent</td>
<td>2.21</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Note: sig. 0.000, F-value 5.618

### 3.3 Instrument
This section describes the constructs used to measure the dependent variables. The items used in this study were partly self-developed and partly derived from previous studies. Most items were measured with a 5-point Likert scale which ranged from strongly disagree (1) to strongly agree (5). For the items brand, product, package evaluation, and perceived dynamism, a factor analysis with a Varimax Rotation was used to select the items that represented the dependent variables.

#### 3.3.1 Brand Evaluation
Brand evaluation was measured with a self-developed construct, using a 5-point Likert scale. Two items were used to measure brand evaluation, with a Cronbach’s Alpha of α = .69 (“the brand distinguishes itself from its competitors” and “the brand is original”). These items mainly measured the distinctive character of the brand, rather than the evaluation of the brand itself.

#### 3.3.2 Product Evaluation
Participants evaluated the product using a 5-point Likert scale. The construct used for this dependent variable partly consisted out of items from constructs developed by Yoo and Donthu (2001) and Jones et al. (2000). Furthermore, self-developed items were added to the construct. Four items were used to measure product evaluation with a Cronbach’s Alpha of α = .88. These items primarily indicated whether someone would like to try the presented product and its attractiveness (example of an used item; “I would like to try this product”). See Appendix B for a complete overview of all used items per construct.

#### 3.3.3 Package Evaluation
Although package evaluation has a strong connection with product evaluation, the factor analysis showed a difference between these two constructs. Product evaluation mainly consisted out of items measuring whether the product was appealing and someone’s willingness to try the product. Package evaluation consisted out of two items which measured the design of the package (“this package is well designed” and “this package is beautiful”). The construct used was self-developed, however most items were very similar to the items developed by Yoo and Donthu (2001) and showed a Cronbach’s Alpha of α = 0.86.
3.3.4 Brand recall
Besides the evaluative constructs, a dependent variable that measured individuals’ brand recall was added. This dependent variable was measured with an unaided open question. Subsequently, people’s answers were divided into three categories, based on to what extent they correctly recalled the brand name (entirely right, partly right or entirely wrong).

3.3.5 Perceived Dynamism
In order to measure the perceived dynamism per stimulus, a self-developed construct was incorporated. This construct consisted out of ten items (active and static characteristics). These items indicated the extent of perceived dynamism or statically with a 5-point Likert scale. After a Factor Analysis, two items were used to measure perceived dynamism (“to what extent does the brand appear to you as active?” and “to what extent does the brand appear to you as a brand for sporting people?”). This construct had a Cronbach’s Alpha of α = 0.73.

3.4 Participants
207 Dutch citizens participated in this research. These people were gathered at the University of Twente, in the center of large Dutch city, door-to-door visits, and at a local company. These participants were all randomly assigned to one of the eight manipulations.

A Chi-square test indicated that there were no significant differences between the expected and the observed distribution of gender among all survey groups (see Table 3).

We performed an Analysis of Variance which showed that the average age of our participants (31 years old, SD = 13) significantly differed between the eight survey groups ($F(7, 187) = 2.17, p < .05$. Further analysis showed that age and package evaluation were negatively correlated, Pearson’s $r(195) = -.223, p < .05$.

At last, the distribution of participants’ educational level among the eight manipulations was tested. A Chi-square test showed that there were no significant differences between the expected and observed distribution of educational level among the eight survey groups (see Table 4).

Table 3
Results of Chi-Square Test and Descriptive Statistics for Gender by Survey Group.

<table>
<thead>
<tr>
<th>Gender</th>
<th>YAA</th>
<th>YAP</th>
<th>YPA</th>
<th>YPP</th>
<th>FAA</th>
<th>FAP</th>
<th>FPA</th>
<th>FPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>14 (54%)</td>
<td>14 (56%)</td>
<td>13 (52%)</td>
<td>16 (64%)</td>
<td>9 (34%)</td>
<td>16 (62%)</td>
<td>17 (65%)</td>
<td>14 (52%)</td>
</tr>
<tr>
<td>Female</td>
<td>12 (46%)</td>
<td>11 (44%)</td>
<td>12 (48%)</td>
<td>9 (36%)</td>
<td>17 (66%)</td>
<td>10 (38%)</td>
<td>9 (35%)</td>
<td>13 (48%)</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>27</td>
</tr>
</tbody>
</table>

Note a: $X^2 = 0.431$, df = 7.

Note b: Numbers in parentheses indicate column percentages.

Note c: survey groups are categorized with three letters. First letter indicates product type (Y = yogurt drink, F = fruit bar), second letter indicates the silhouette used (A = active silhouette, P = static silhouette), and third letter indicates the slogan used (A = active slogan, P = static slogan).
Table 4

Results of Chi-Square Test and Descriptive Statistics for Educational Level by Survey Group.

<table>
<thead>
<tr>
<th>Educational level</th>
<th>YAA</th>
<th>YAP</th>
<th>YPA</th>
<th>YPP</th>
<th>FAA</th>
<th>FAP</th>
<th>FPA</th>
<th>FPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Educational Level</td>
<td>12 (46%)</td>
<td>10 (40%)</td>
<td>20 (80%)</td>
<td>13 (52%)</td>
<td>11 (42%)</td>
<td>14 (54%)</td>
<td>11 (42%)</td>
<td>13 (48%)</td>
</tr>
<tr>
<td>High Educational Level</td>
<td>14 (54%)</td>
<td>15 (60%)</td>
<td>5 (20%)</td>
<td>12 (48%)</td>
<td>15 (58%)</td>
<td>12 (46%)</td>
<td>15 (58%)</td>
<td>14 (52%)</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>27</td>
</tr>
</tbody>
</table>

Note a: $X^2 = 0.115$, df = 7.

Note b: Numbers in parentheses indicate column percentages.

Note c: Survey groups are categorized with three letters. First letter indicates product type (Y = yogurt drink, F = fruit bar), second letter indicates the silhouette used (A = active silhouette, P = static silhouette), and third letter indicates the slogan used (A = active slogan, P = static slogan).

3.5 Procedure

Participants were randomly assigned to one of the eight manipulations. Participants first impressions were measured with an online survey. This survey was completed on an iPad, Qualtrics was used to collect all the data. The participants were first instructed to carefully read the introduction before starting the survey. The introduction explained the purpose of the research and the estimated time to complete the survey. The researcher only assisted the participant at times when technical issues occurred. Participants were never assisted by the researcher with answering questions. During the whole data collecting process, there were only a few moments of doubt among some participants when filling in the survey. In occurrence of this event, the researcher tried to assist the participant as good as possible without influencing the participants’ opinion or answer. There was no further involvement with the participant after he or she successfully completed the survey.

3.6 Analysis

The hypotheses regarding the brand and product evaluation (H1, H2, H5, and H6) were tested with an ANOVA. This test was used to determine if there were interaction effects between the silhouette, slogan, and product type. H3 and H7 were tested with the same independent variables. However, since age had a significant effect on package evaluation, an ANCOVA was used. Product type was included to rule out any strengthened or weakened evaluations due to personal conceptions.

Hypothesis 4 and 8 tested the effects of dynamism and congruency on brand recall. In order to measure the effects of both dynamism and congruency, two separate Mann-Whitney U tests were performed. Within the first test, the eight manipulation were divided into two groups. Group one contained all dynamic designs while the second group contained all static variants, thereby testing the influence of dynamism. With the second Mann-Whitney U test, the groups were divided per level of congruency. Group one contained all congruent variants while the second group contained the incongruent variants. Due to this distribution, the influence of congruency on brand recall could be tested.
4. Results
This section elaborates on the most important findings of this research. During this research a 2 x 2 x 2 design was used to test the effects of silhouette, slogan and product type on brand, product, and package evaluation. First of all, the extent of perceived dynamism between the eight different designs will be mentioned. Subsequently, the findings on brand, product and package evaluation will be highlighted. At last, the effects of silhouette and slogan on brand recall will be highlighted. These effects on brand recall were measured with a 2 x 2 design. The influence of product type was disregarded since product type had no significant effect. Furthermore, a Mann-Whitney U test was used which cannot be performed with two categorical variables.

4.1 Perceived Dynamism
Perceived dynamism was added as a manipulation check for this research. Noticeable differences were found between the perceived dynamism of the entirely dynamic and entirely static designs (dynamic $M = 4.01$ $SD = 0.69$, static $M = 3.31$ $SD = 0.94$). However, no significant interaction effects were found between silhouette, slogan, and product type $F(1, 199) = .00, p = .99$. Furthermore, no significant interactions effect was found between silhouette and slogan on perceived dynamism $F(1, 199) = .79, p = .38$.

Results did show a significant effect from both silhouette ($F(1, 199) = 13.28 p = > 0.05, \eta^2_p = .06$) and slogan ($F(1, 199) = 5.02 p = > .05, \eta^2_p = .03$) on perceived dynamism. Whereby silhouette had a stronger effect on perceived dynamism than slogan.

4.2 Brand Evaluation
An ANOVA was performed to examine the effect of silhouette (dynamic, static), slogan (dynamic, static), and product type (yogurt drink, fruit bar) on consumers’ brand evaluation. Results indicated that there were no main effects of silhouette, slogan, or product type. Next, there were no interaction effects found between silhouette, slogan, and product type. Therefore, it can be said that dynamism (active design, $M = 3.17$, $SD = 0.71$; static design, $M = 3.18$, $SD = 0.86$) and congruency did not enhance brand evaluation (congruent design, $M = 3.18$, $SD = 0.79$; incongruent design, $M = 3.22$, $SD = 0.87$). Table 5 visualizes the absence of any significant influence. Furthermore, no relation between the independent variables and brand evaluation were observed.

Table 5
Results ANOVA Influence of Silhouette, Slogan, and Product Type on Brand Evaluation.

<table>
<thead>
<tr>
<th>Brand evaluation</th>
<th>Source of variation</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Silhouette</td>
<td>1</td>
<td>0.06</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>Slogan</td>
<td>1</td>
<td>0.08</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>Product Type</td>
<td>1</td>
<td>0.00</td>
<td>0.98</td>
</tr>
<tr>
<td></td>
<td>Silhouette * Slogan</td>
<td>1</td>
<td>0.12</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>Silhouette * Product Type</td>
<td>1</td>
<td>0.59</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>Slogan * Product Type</td>
<td>1</td>
<td>0.07</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>Silhouette * Slogan * Product Type</td>
<td>1</td>
<td>0.15</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>199</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3 Product Evaluation
The effects of silhouette, slogan, and product type on product evaluation were tested with an ANOVA. The test indicated that there were no significant main effects of silhouette, slogan, or product type on consumers’ product evaluation. Subsequently, no significant interactions effects were found. Therefore, it can be concluded that perceived dynamism did not enhance product evaluation (active design, $M = 3.28$, $SD = 0.83$; static design, $M = 3.16$, $SD = 0.91$). No significant positive effects due to congruency on product evaluation were found either (congruent design, $M = 3.22$, $SD = 0.87$ incongruent design, $M = 3.18$, $SD = 0.87$). Table 6 shows the absence of any significant results. Furthermore, a very small effect size on product evaluation was found when silhouette, slogan, and product type were combined.

Table 6
Results ANOVA Influence of Silhouette, Slogan, and Product Type on Product Evaluation.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silhouette</td>
<td>1</td>
<td>0.15</td>
<td>0.70</td>
<td>0.00</td>
</tr>
<tr>
<td>Slogan</td>
<td>1</td>
<td>0.46</td>
<td>0.50</td>
<td>0.00</td>
</tr>
<tr>
<td>Product Type</td>
<td>1</td>
<td>0.13</td>
<td>0.72</td>
<td>0.00</td>
</tr>
<tr>
<td>Silhouette * Slogan</td>
<td>1</td>
<td>0.10</td>
<td>0.76</td>
<td>0.00</td>
</tr>
<tr>
<td>Silhouette * Product Type</td>
<td>1</td>
<td>0.06</td>
<td>0.81</td>
<td>0.00</td>
</tr>
<tr>
<td>Slogan * Product Type</td>
<td>1</td>
<td>0.20</td>
<td>0.66</td>
<td>0.00</td>
</tr>
<tr>
<td>Silhouette * Slogan * Product Type</td>
<td>1</td>
<td>1.61</td>
<td>0.21</td>
<td>0.01</td>
</tr>
<tr>
<td>Error</td>
<td>199</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.4 Package Evaluation
An ANCOVA was performed to examine the effects of silhouette (dynamic, static), slogan (dynamic, static), and product type (yogurt drink, fruit bar) with age as covariate on consumers’ package evaluation. Age was added as a covariate since a previous ANOVA indicated a significant effect of age on package evaluation. The ANCOVA showed no significant main or interactions effects on package evaluation. Therefore, it can be concluded that perceived dynamism did not enhance package evaluation (active design, \( M = 3.56, SD = 0.81 \); static design, \( M = 3.71, SD = 0.86 \)). There were no significant effects due to congruency on package evaluation (congruent design, \( M = 3.63 \) \( SD = 0.81 \); incongruent design, \( M = 3.51, SD = 0.92 \)). Table 7 visualizes that there are no important effects of the independent variables on package evaluation.

### Table 7

Results ANCOVA Influence of Age (covariate), Silhouette, Slogan, and Product Type on Package Evaluation.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>( \eta^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1</td>
<td>8.65</td>
<td>.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Silhouette</td>
<td>1</td>
<td>0.38</td>
<td>.54</td>
<td>0.00</td>
</tr>
<tr>
<td>Slogan</td>
<td>1</td>
<td>0.70</td>
<td>.40</td>
<td>0.00</td>
</tr>
<tr>
<td>Product Type</td>
<td>1</td>
<td>0.69</td>
<td>.41</td>
<td>0.00</td>
</tr>
<tr>
<td>Silhouette * Slogan</td>
<td>1</td>
<td>1.89</td>
<td>.17</td>
<td>0.00</td>
</tr>
<tr>
<td>Silhouette * Product Type</td>
<td>1</td>
<td>0.83</td>
<td>.36</td>
<td>0.00</td>
</tr>
<tr>
<td>Slogan * Product Type</td>
<td>1</td>
<td>1.46</td>
<td>.23</td>
<td>0.00</td>
</tr>
<tr>
<td>Silhouette * Slogan * Product Type</td>
<td>1</td>
<td>0.01</td>
<td>.93</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>186</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.5 Brand Recall
The effects of dynamism and congruency on brand recall were tested using two separate Mann-Whitney U tests. For the influence of dynamism on brand recall, the entire dynamic variants (from both yogurt drink and fruit bar) and entirely static variants (from both yogurt drink and fruit bar) were compared with each other. Results indicated that there were no significant differences on brand recall between the dynamic and static designs (\( U = 1177, p = .213 \)).

In order to test whether congruency had a significant influence on brand recall, the congruent variants (entirely dynamic and entirely static) and incongruent variants (dynamic silhouette/static slogan and static silhouette/dynamic slogan) were compared. The Mann-Whitney U test showed significant differences between the congruent and incongruent variants on brand recall (\( U = 4433, p = < .05 \)). This implies that there is a significant effect on consumers’ brand recall when exposed to a congruent object. Table 8 was added to give a visual overview of participants’ brand recall scores per manipulation. Especially the differences between the answers ‘entirely right’ and ‘entirely wrong’ between the congruent and incongruent designs catches the eye.
5. Discussion

5.1 Main Findings

The main purpose of this research was to answer the research questions: to what extent does perceived dynamism positively affects consumers’ brand, product, package evaluation and brand recall and to what extent does congruency positively affects consumers’ brand, product, package evaluation and brand recall. A variety of studies showed the positive effects of perceived dynamism (Cian et al. 2014; Marks, 1973; Paivio, 1969) and congruency (Cian et al. 2014; Van Rompay et al. 2010; Van Rompay et al. 2009; Lee & Labroo, 2004). Within this research, these effects were tested with an online survey.

Results showed an increased brand recall among consumers when exposed to a congruent design, as suggested by Higham and Vokey (2000). These findings clearly show the positive effect of congruency on brand recall. Although, results indicated that congruency facilitates brand recall, no significant effects on consumers’ brand, product, or package evaluation due to congruency were found. These findings are in contradiction with the current available literature. These studies showed positive effects of congruency on consumers’ attitude and recall (Cian et al. 2004; Higham and Vokey, 2000).

Furthermore, this research showed no significant effects on brand, product, package evaluation, or brand recall due to perceived dynamism. This is in contradiction with previous studies (Cian et al. 2014; Marks, 1973) that did show enhanced consumer attitude and improved recall. An ANOVA indicated that combinations between visual and verbal elements did not significantly affected perceived dynamism. However, that same test did show significant effects from both verbal and visual elements on perceived dynamism when not combined with each other. The lack of significant results due to perceived dynamism can be ascribed to the absence of perceived dynamism. Therefore, this research failed to test the effects of perceived dynamism, since no significant interaction effect between silhouette and slogan were found.

Findings from this research did support the processing fluency theory on the effect on brand recall. However, most findings were in contradiction with previous studies conducted in the area of dynamism and congruency. As suggested, the absence of significant results can be ascribed to the lack of perceived dynamism when both elements (visual and verbal) were combined. A second explanation was suggested by Van Rompay et al. 2009. They performed a study which gives an additional explanation to the insignificant results on attitude due to congruency. They performed a study whereby they tested among others, the influence of congruency on attitude. Their findings indicated that an interaction effect between product shape (natural or artificial) and slogan (natural or artificial) only applied to the participants high in need for structure. They found no significant differences between congruent and incongruent variants when evaluated by participants with a low need for structure. Thus, the presence of congruence is only noticed by people who were in high need of structure. The product types used in this and their study were both low-involvement goods. Therefore, their explanation can be applied to the findings of this research.

<table>
<thead>
<tr>
<th>Table 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of Brand Recall per Manipulation.</td>
</tr>
<tr>
<td>Dynamic</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Entirely Right</td>
</tr>
<tr>
<td>Party Right</td>
</tr>
<tr>
<td>Entirely Wrong</td>
</tr>
</tbody>
</table>
5.2 Theoretical Contributions
The findings of this study are a contribution to the current literature in the area of the processing fluency theory. In accordance with previous studies, this study proposes that meaning-based processing fluency has a positive influence on consumers’ brand recall. Previous studies such as Higham and Vokey (2000) and Toth (1996) studied the positive effects of meaning-based processing fluency on familiarity and memory. Lange and Dahlen (2003) performed a study on the effects of ad and brand (in)congruency. They found that incongruency leads to a reduced brand memorability when exposed to an unfamiliar brand, such as Smilky. These results are in-line with findings from this research.

Besides the positive effects due to congruency on recall, this study failed to find more supportive results for the currently available literature in the area of processing fluency. The same applies to the current literature in the area of dynamism. A possible explanation for the insignificant results due to dynamism can be ascribed to participants’ individual interpretations. Eco (1976) proposed that pictures are more open to multiple interpretations than verbal messages since visuals are implicit while verbal messages are explicit. This explanation may be strengthened by the findings which suggest that a combination between visual and verbal elements does not significantly affect consumers’ perceived dynamism. However, individually both the visual and verbal elements have a significant influence on perceived dynamism. Therefore, this study suggests that visual and verbal messages are difficult to combine in order to create congruence in meaning. However, individually they can contribute to consumers’ perceived dynamism.

5.3 Practical Recommendations
The results of this research are of great value for business and marketing managers and yield some interesting results in the area of processing fluency. The findings from this research suggest that managers can include congruent design elements to stimulate brand recall. These results are especially interesting for advertising and positioning purposes. When a brand can be recalled more easily, consumers are more likely to include that brand in their consideration set due to the previous exposure. However, managers should place the results of this study in the right context. This study was performed with low-involvement products. The presence of congruency might not affect consumers’ brand recall when exposed to a high-involvement product.

5.4 Limitations and Suggestions for Future Research
A pre-test was performed to ensure the research stimuli were manipulated either dynamic, static, congruent, or incongruent. Although these manipulations were indeed evaluated significantly different in the extent of perceived dynamism and perceived congruency during the pre-test, these results were not found during the main research. There was no manipulation check for congruency within this study. Therefore, the positive results on brand recall due to congruency are based on the pre-test results. However, a manipulation check for perceived dynamism was implemented within this study. Results indicated that there were no significant interaction effects between silhouette and slogan on perceived dynamism. Therefore, this study failed to test the effects of dynamism on brand, product, package evaluation, and brand recall.

Future studies could test the effect of perceived dynamism with different visual and verbal elements as used within this study. Another manner to test the presence of dynamism is to implement psychophysiological measurement methods. Studies indicated that a dynamic object would result in a stronger eye-fixation and longer gaze periods and therefore increasing engagement. The implementation of these measurement methods could also be used in the area of congruency since processing fluency should decrease mental effort and stimulate positive emotions. These positive emotions can be measured with a device which monitors whether muscles that are strongly associated with positive emotions were indeed stimulated. Both cognitive events in the area of perceived dynamism and processing fluency should have positive effects on attitude and brand recall. Therefore, the implementation of psychophysiological measurements are recommended.
Especially a device which measures participants’ muscle activation can be used in future studies. During the pre-test, participants consciously evaluated the extent of congruency per manipulation with a guided question ("to what extent does the slogan match with the silhouette?") while the presence of congruency was not tested during the main study. The guided question may have caused a conscious shift of attention to the extent of congruency. While the presence of (in)congruence might have remained unnoticed among the participants on a subconscious level during the main study.

5.5 Conclusion
This study highlights the positive effects of congruency between visual and verbal elements on brand recall. Although, no psychophysiological measurement were used, it is assumed that these findings are the result of the processing fluency theory. In contradiction with the current literature, congruency did not significantly influence consumers’ attitude. As suggested, this can be ascribed to participants’ low-need for structure and the interpretation problems between visual and verbal elements. These interpretations issues have undermined the interaction effect between silhouette and slogan on perceived dynamism. This explains the absence of significant effects on attitude or brand recall due to dynamism.
6. References


7. Appendendices

Appendix A: Stimulus material main study

Yogurt Drink – Active Silhouette – Active Slogan - Congruent
Yogurt Drink – Active Silhouette – Static Slogan - Incongruent
Yogurt Drink – Static Silhouette – Active Slogan - Incongruent
Fruit Bar – Active Silhouette – Active Slogan - Congruent

Fruit Bar – Active Silhouette – Static Slogan - Incongruent
Appendix B: Overview used items per construct

Factor Loading after Varimax Rotation

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>This product appeals to me</td>
<td>.878</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This product is attractive</td>
<td>.846</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am positive about this product</td>
<td>.845</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would like to try this product</td>
<td>.740</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent does the brand appear to you as active</td>
<td></td>
<td>.877</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent does the brand appear to you as a brand for sporting people</td>
<td></td>
<td>.859</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The brand distinguishes itself from its competitors</td>
<td></td>
<td></td>
<td>.838</td>
<td></td>
</tr>
<tr>
<td>This brand is original</td>
<td>.845</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This package is well designed</td>
<td></td>
<td></td>
<td>.859</td>
<td></td>
</tr>
<tr>
<td>This package is beautiful</td>
<td></td>
<td></td>
<td>.905</td>
<td></td>
</tr>
</tbody>
</table>

Note: factor 1 = product evaluation, factor 2 = perceived dynamism, factor 3 = brand evaluation, and factor 4 = package evaluation.