

‘The loudest taste on earth‘

A study on the persuasive ability of synaesthetic metaphors.

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1. Introduction

Nearly everyone in the modern world is influenced to some degree by advertising and other forms of promotion (Belch & Belch, 2003). Advertising is a form of communication which is intended to persuade an audience to purchase a product or take action that might lead to purchasing a product (de Vries, 2012). Advertising involves mass media that can transmit a message to large groups of individuals, often at the same time, with no opportunity for immediate feedback (Belch & Belch, 2003). This means that the advertisers must consider how their audience will interpret and respond to their advertisement in order to achieve the desired effect.

Therefore, straightforward claims - that a brand possesses some attribute or delivers some benefit - are rare (McQuarrie & Phillips, 2005). On the other hand, straightforward pictures do occur, but guided with a metaphorical headline. A common and complex form of metaphorical headlines is the synaesthetic headline (Shen & Cohen, 1998). The message-complexity of synaesthetic headlines increases elaboration, because the consumer must figure out the advertisement's message (Mothersbaugh, Hughmann & Franke, 2002). Extensive elaboration then might lead to a greater recall of the advertisement (Mothersbaugh et al., 2002). Besides the increase of recall, elaboration caused by rhetoric also led to a more favorable attitude towards the advertisement. Not only a greater recall might be achieved, synaesthetic metaphors in headlines can be persuasive as well, when a few conditions are met.

In this bachelor thesis, synaesthetic metaphors are studied with regard to mapping structure, persuasion and recall. More specifically, we tend to provide evidence that the so-called lower to higher mapping structure is better evaluated in product advertisements than the inverse. The focus then lies on the persuasive character and the recall of this mapping structure.

2. CONCEPTUAL FRAMEWORK

2.1 METAPHORS

According to the online Oxford dictionary (<http://oxforddictionaries.com>) the definition of metaphor is as follows: “A figure of speech in which a word or phrase is applied to an object or action to which it is not literally applicable.” In brief this means that: “a metaphor asserts a similarity between to objects that one does not expect to be associated” (Ang & Lim, 2006). A metaphor can be expressed in the form ‘A is B’ (Nelson & Hitchon, 1995; Nelson & Hitchon, 1999). A common example is ‘my heart is broken’, where the heart (A) is not literally broken (B), but meaning that the person referred to is experiencing heartache.

The use of metaphors spreads across various disciplines, including: literature, politics, science, education and advertising (Semino 2008). The use of metaphors in advertising still raises many questions, but in the 1994s, 74% of the magazine advertisements already made use of this rhetorical figure (Leigh, 1994 cited in Phillips & McQuarrie, 2003; McQuarrie & Phillips 2005; Mothersbaugh et al., 2002). A reason for this could be, that researchers assume that metaphors increase interest (Goatly, 1950 in; Ang & Lim, 2006) and elicit more cognitive elaboration (Kardes 1988 in; Ang & Lim, 2006), which leads to favorable attitudes (Heckler & Childers, 1992 in; Ang & Lim, 2006), because metaphors create novelty and thereby increase motivation to read and process the advertisement (Goodstein, 1993 in; Ang & Lim, 2006). Therefore, metaphors in advertising are often used as a rhetorical strategy to break through the clutter and communicate a certain message (Ang & Lim, 2006). In addition, the use of rhetorical style in magazine advertisements is growing more complex (Phillips & McQuarrie, 2002) and the pervasiveness of synaesthetic metaphors in print advertising increases (Nelson & Hitchon, 1999).

2.2 SYNAESTHESIA

A synaesthetic metaphor is the description of a perception in one sensory modality in terms of another sensory modality (Shen & Gadir, 2009). These metaphors originate from the phenomenon of synaesthesia, where ‘syn’ means union and ‘aesthesia’ stands for sensation (Nelson & Hitchon, 1995). Here, synaesthesia denotes the rare capacity to hear colors, taste shapes, or experience other astonishing sensory blendings (Cytowic, 1995). The oldest and most common form is de auditory/visual transfer of colored hearing, where a person actually sees corresponding colors when listening to music or sounds (Weiss, Zilles & Fink, 2005; Nelson & Hitchon, 1995). This neurological phenomenon of “abnormal interaction of neural processes regarding different senses” (Werning, Fleishhauer & Beseoglu, 2006) resulted in awareness and

interest among diverse disciplines, including the popular culture of advertising (Nelson Hitchon, 1995).

2.2.1 SYNAESTHETIC METAPHORS

This increased awareness created a universal tendency to appreciate the richness and closeness of similarities among visual, auditory and other sensory qualities (Nelson & Hitchon, 1995). This results in the linguistic use of synaesthesia in metaphors, that is – in contrast to the neurological aspect – not restricted to a small part of the population (Werning et al., 2006). We can all experience synaesthesia metaphorically, by using words describing experiences to one sense modality and transferring their meanings into another modality (Nelson & Hitchon, 1999). For example in ‘cold light’ we talk about light, which is assigned to the visual domain, in terms of coldness, which is assigned to the tactile domain (Shen & Aisenman, 2008). In this case the synaesthesia ‘cold light’ can be described as a mapping from the source domain of touch into the target domain of vision (Shen & Aisenman, 2008; Shen & Cohen, 1998). Generally, terms belonging to the lower sensory modalities , for example touch and taste, are assigned the source function, while terms belonging to the higher sensory modalities, for example vision and sight, are assigned the target function (Shen & Gadir, 2009).

As Figure 1 shows, the perceptual modalities are organized along a scale ranging from the highest modality to the lowest modality (Ullman, 1957 as cited in Shen & Cohen, 1998; Werning et al., 2006; Shen & Aisenman, 2008). According to this scale, a synaesthetic metaphor could map from a lower to a higher modality or from a higher to a lower modality (Shen & Aisenman, 2008). Shen & Cohen (1998) compare the synaesthetic metaphors ‘a sweet silence’ and ‘a silent sweetness’. In ‘a sweet silence’ a low to high mapping is represented: the source function taste belongs to a lower modality than the target function sound. A high to low mapping is represented in ‘a silent sweetness’: the source function sound belongs to a higher modality than the target function taste. Although both patterns are possible, a lower to higher mapping pattern is suggested (Shen & Cohen, 1998).



Figure 1 Modality scale (ranging from the highest modality to the lowest)

Two main reasons for proposing a lower to higher mapping are formulated by Shen & Aisenman (2008). These reasons are based on the premise that mapping from a more concrete concept onto a less concrete one is more natural than the inverse, where lower modalities are seen as

more concrete concepts (Shen & Aisenman, 2008). The first reason involves the distinction between experience-based and object-based sensations (Shen & Aisenman, 2008). Experience-based sensations represent a direct bodily experience. Opposite to that, object-based sensations are understood as belonging to the object that causes the sensation. Experience-based sensations are more concrete than object-based sensations (Shen & Aisenman, 2008) The reason for this is that the experience of warmth is not assigned to the object, but is perceived as part of the physiological sensation of heat, while the perception of the color white is not experienced as a sensation of the experiencer’s body. Generally the lower modalities – touch, taste and partly smell – are experience-based sensations (Shen & Aisenman, 2008). Therefore, these modalities are seen as more concrete than modalities belonging to object-based sensations, such as sight and sound.

The second reason for presuming lower modalities are more accessible is based on the distance between the sense and the object of perception (Shen & Aisenman, 2008). To experience the lower modalities touch and taste, it is necessary that there is direct contact with the object of perception. For the higher modalities sight and sound, there is no minimal distance required, for example the Egyptian pyramids can be perceived from a photograph. The fifth modality sense is in between, no direct contact is necessary, but generally there is a kind of closeness between the body and the source of the smell (Shen & Aisenman, 2008; Shen & Gadir, 2009). As the lower modalities require physical contact with the object of perception, they are more concrete than the higher modalities.

These two reasons support the premise that lower sense modalities are easier accessible as higher sense modalities, as lower sense modalities are experience-based and in direct contact with the object of perception (Shen & Aisenman, 2008). Therefore these arguments support the proposition of lower modalities mapping into higher modalities (Shen & Cohen, 1998). This means that synaesthetic metaphors are more likely to map according to the green areas that are shown in figure 2. These areas represent lower to higher mapping that is used more frequently and is therefore, better evaluated than high to low mapping (Shen & Cohen, 1998).

Source – target	Source – target	Source – target	Source – target	Source – target
Touch – touch	Taste – touch	Smell – touch	Sound – touch	Sight – touch
Touch – taste	Taste – taste	Smell – taste	Sound – taste	Sight – taste
Touch – smell	Taste – smell	Smell – smell	Sound – smell	Sight – smell
Touch – sound	Taste – sound	Smell – sound	Sound – sound	Sight – sound
Touch – sight	Taste – sight	Smell – sight	Sound – sight	Sight – sight

Figure 2 Mapping of synaesthetic metaphors

2.3 SYNAESTHETIC METAPHORS IN ADVERTISING

Synaesthetic metaphors are present for years throughout many disciplines, from poetry to opera and ballet (Nelson & Hitchon, 1995). But since recent years, the use of synaesthetic metaphors in product advertising has increased in popularity (Crisinel & Spence, 2012). Today's commercials, print and television advertisements, jingles and slogans feature synaesthetic metaphors in many forms (Nelson & Hitchon, 1999). Examples of these are 'taste the rainbow' used by Skittles and 'the loudest taste on earth' implemented by Doritos. These metaphors in print advertising are normally located in the slogan or headline, which are considered as of great importance by advertising practitioners and academicians (Nelson & Hitchon, 1995). The reason for this is to prompt curiosity: to create a slogan that stops the viewer's scanning of ads. But do synaesthetic metaphors in slogans create this desired effect?

2.3.1 EFFECTS OF SYNAESTHETIC METAPHORS IN ADVERTISING

Based on theory of metaphor, researchers (Nelson & Hitchon, 1995) proposed that synaesthetic slogans would produce more favorable brand attitudes than comparable literal slogans. Nelson & Hitchon (1999) also suggest that the unusual nature of synaesthetic metaphors may enhance persuasion due to the expectancy violation theory. When expectations are violated people notice and change their information processing. Although this sounds plausible, research (Nelson & Hitchon, 1995, 1999) proves differently.

Synaesthetic metaphors are described as unpleasant, incongruous and incomprehensible (Nelson & Hitchon, 1995). Therefore, Nelson & Hitchon (1995) conclude that "something as ambiguous and indirect as a synesthetic metaphor may irritate rather than seduce today's harried customer." However, in further research (Nelson & Hitchon, 1999) synaesthetic metaphors are perceived as more pleasant and more novel. They grab our attention, capture our imagination, please us and might even enhance persuasion (Nelson & Hitchon, 1999).

Although these findings are in favor of using synaesthetic metaphors in advertising, a few limitations need to be taken into consideration. Firstly, synaesthetic ads were considered as more unusual, but literal ads generated higher scores on persuasion (Nelson & Hitchon, 1999). Secondly, synaesthetic ads tend to be persuasive only when they associate a sense that is literally absent to one that is present (Nelson & Hitchon, 1999). When both senses are literally present, imagination is constrained. Therefore Nelson & Hitchon (1999) propose that a synaesthetic metaphor can be more persuasive than a literal claim in the context of products whose usage does not literally require both senses. Finally, using a high degree of originality may increase attention scores, but recall and recognition may suffer (Nelson & Hitchon, 1995).

Besides that, a brief remark needs to be made about these findings. Both studies (Nelson & Hitchon, 1995, 1999) were based on only two senses: sight and sound. Results for synaesthetic

metaphors related to other senses are therefore, not available. This means that further and broader research is required.

3. HYPOTHESES

The research question that rises from the conceptual framework is:

RQ: Do synaesthetic metaphors map according to the so-called lower to higher mapping structure and hereby create a positive attitude regarding to advertisements and enhance recall and persuasion?

The premise that lower to higher mapping occurs more frequent and is better evaluated than its inverse is presented, as a robust general pattern, characterizing the use of synaesthetic metaphors in natural language in general, across types of discourse, historical periods and linguistic and cultural diversity (Shen & Aisenman, 2008). But to a large extent, this premise is based on poetry corpora (Shen & Cohen, 1998; Shen & Aisenman, 2008). As the use of synaesthetic metaphors in product advertisements has increased in popularity in recent years (Crisinel & Spence, 2012), it is important to examine whether or not the lower to higher mapping structure results in a better evaluation in product advertisements as well. This results in the first hypothesis:

H1: In product advertisements the lower to higher mapping structure is better evaluated than the higher to lower mapping structure.

The second hypothesis is based on research by Nelson & Hitchon (1995, 1999). They (Nelson & Hitchon, 1999) concluded that synaesthetic advertisements are more persuasive when a sense that is literally absent is associated with a sense that is present. Therefore, the source domains that possess characteristics that are not in line with the product will be evaluated as more persuasive than source domains that do match the product characteristics. This means that the second hypothesis will be formulated as follows:

H2: In product advertisements where the lower to higher mapping structure is present and the source domain possesses characteristics that are not in line with the product, the synaesthetic metaphor used will be evaluated as more persuasive.

Then a third, and final, hypothesis is formulated concerning the recall of synaesthetic metaphors. As mentioned, recall may suffer from the originality of synaesthetic metaphors (Nelson & Hitchon, 1995). But, according to the expectancy violation theory explained earlier, information is processed differently which may enhance recall. In addition, Mothersbaugh et al. (2002) also

argue that this extensive elaboration might lead to a greater recall of the advertisement. Therefore, the third hypothesis is:

H3: The use of synaesthetic metaphors in product advertisements enhances recall.

4. METHOD

4.1 MATERIALS

In previous research (Nelson & Hitchon, 1995, 1999) the effect of synaesthetic metaphors concerning sight en sound was evaluated. Based on these senses, various synaesthetic metaphors were formed by Nelson & Hitchon, 1999). In this research we wanted to evaluate the effect of synaesthetic metaphors concerning all sensory modalities. Therefore, we created a total of 25 synaesthetic metaphors wherein all combinations are present, as can be seen in figure 3. These metaphors were created on the table together with Carleen Baas, Sophie Boelen, Stephanie Bours, Esther Radix, Donna van de Ven and Yik Man Wong.

<i>Sense</i>	Touch	Taste	Smell	Sound	Sight
Touch	Zijdezacht gevoel	Stevige smaak	Sensuele geur	Warm geluid	Warme kleur
Taste	Zoetig gevoel	Bittere smaak	Milde geur	Lekker geluid	Zoete kleur
Smell	Bloemig gevoel	Aromatische smaak	Frisse geur	Lavendelachtig geluid	Bloesemachtige kleur
Sound	Fluisterend gevoel	Knallende smaak	Stille geur	Oorverdovend geluid	Sprekende kleur
Sight	Mooi gevoel	Heldere smaak	Kleurige geur	Donker geluid	Bonte kleur

Figure 3 **Synaesthetic metaphors**

These synaesthetic metaphors (figure 3) are used as slogans in self-created product advertisements. The product advertisements used are based on the simple design of Allerhande advertisements. Allerhande advertisements consist of a slogan, a product picture and some extra information. We chose to leave the extra information out, so the focus would only lie on the synaesthetic slogans (Appendix 1).

The products used in these product advertisements are: toilet paper, coffee, deodorant, earplugs and paint. They are based on the five sensory modalities used in this research. Toilet paper represents the touch sense, coffee is part of taste, smell is represented by deodorant, earplugs belong to sound and paint appeals to our sight. Therefore, figure 3 results in figure 4 when the advertisement types are included.

Type	Toilet paper	Coffee	Deodorant	Earplugs	Wall paint
1	Zijdezacht gevoel	Stevige smaak	Sensuele geur	Warm geluid	Warme kleur
2	Zoetig gevoel	Bittere smaak	Milde geur	Lekker geluid	Zoete kleur
3	Bloemig gevoel	Aromatische smaak	Frisse geur	Lavendelachtig geluid	Bloesemachtige kleur
4	Fluisterend gevoel	Knallende smaak	Stille geur	Oorverdovend geluid	Sprekende kleur
5	Mooi gevoel	Heldere smaak	Kleurige geur	Donker geluid	Bonte kleur

Figure 4 Synaesthetic metaphors grouped by advertisement type and slogan type

4.2 INSTRUMENTATION

With the materials described in subsection 4.1, an online survey was constructed (see appendix 2). At first a few demographic questions were queried concerning age, gender and education. Secondly, the designed product advertisements need to be evaluated by means of suitability, persuasion, liveliness and understandability. These concepts are based on the concepts used by Shen & Cohen (1998). For each construct four questions were formulated. Thirdly, each product advertisement was rated on the intention to purchase and finally a retention task was conducted. All items were rated on a 7-point Likert scale.

In order to avoid participants being influenced by other synaesthetic metaphors in the same product category, five different surveys were designed. The different synaesthetic slogans were divided amongst the surveys as follows:

- (1) *zijdezacht gevoel, knallende smaak, milde geur, donker geluid & bloesemachtige kleur.*
- (2) *zoet gevoel, heldere smaak, frisse geur, warm geluid & sprekende kleur.*
- (3) *bloemig gevoel, stevige smaak, kleurige geur, oorverdovend geluid & zoete kleur.*
- (4) *fluisterend gevoel, aromatische smaak, sensuele geur, lavendelachtig geluid & bonte kleur.*
- (5) *mooi gevoel, bittere smaak, stille geur, lekker geluid & warme kleur.*

For each survey a pre-test was conducted to examine if the questions were interpreted the way as they were intended. The pre-test resulted in adapting the product advertisements. Product information was removed from the product photo, because respondents focused more on this information than on the synaesthetic slogan. Besides that, the introduction was rewritten, so that it was more clear that respondents were asked to evaluate the slogan instead of the product. In addition, the introduction to the concept buying behavior was redesigned for the same ambiguity reason. Lastly, some textual mistakes were rectified.

After conducting the survey we needed to examine if the questions concerning the concepts suitability, persuasion, liveliness, understandability and buying intention actually measure these concepts and therefore, a reliability test is executed. The reliability of these concepts is determined by means of Cronbach's Alpha. This test shows that all values for Cronbach's Alpha meet the standard of .70 (Table 1). Namely, the highest value of Cronbach's Alpha is .95 for understandability and the lowest .78 for liveliness. Therefore, the four questions concerning each concept are taken together in further analysis.

Concept	Cronbach's Alpha
Suitableness	.93
Persuasion	.85
Liveliness	.78
Understandability	.95
Buying intention	.94

Table 1 Cronbach's Alpha

4.3 RESPONDENTS

In total, 177 Dutch respondents started the survey, however, 167 respondents completed the survey and 26 of them did not provide demographic data, including age, education and gender. Of the other 141, the mean age is 27 and a range of 18-60. The sample consisted of 53 male and 88 female respondents. The average highest completed education of the female respondents is VWO/gymnasium (43,2%, see table 2). VWO/gymnasium is, together with HBO/HTS and university, the average highest completed education of the male respondents (table 2). In general, the average highest completed education is VWO-gymnasium (35,9%, see table 2).

Education	Female (in %)	Male (in %)	Total respondents (in %)
VMBO/LTS/LHNO	2,3	1,9	2,1
HAVO	8,0	13,2	9,9
VWO/gymnasium	43,2	24,5	35,9
MBO/MTS	15,9	11,3	14,1
HBO/HTS	13,6	24,5	18,3
University	15,9	24,5	19,0
Other	1,1	0,0	0,7

Table 2 highest completed education

4.4 DESIGN

The research design is a mixture of a within subject design and a between subject design. Each respondent evaluated all product categories (within subject design), but was assigned to another survey based on synaesthetic slogan type (between subject design). The respondents needed to evaluate all product categories in order to prevent product effects to occur. However, not all synaesthetic slogans were present in each survey. The reason for this was that we did not want respondents to compare slogans for each product category, respondents needed to judge each slogan on its own. As a result we choose a mixture of a within- and between subject design for this research.

4.5 PROCEDURE

As the data was collected by more than one person, we needed to make sure that everyone followed the same procedure. Therefore, we discussed the procedure of the pre-test and survey in a meeting.

The respondents were sent the link to the online survey on thesistools.com. Thesistools.com randomly assigned the respondents to one of the five surveys. At first the respondents were shown the following introduction text:

Beste deelnemer,

Voor onze opleiding Communicatie- en Informatiewetenschappen doen wij een onderzoek naar het optimaliseren van productadvertenties. Daarom vragen wij u om uw oordeel te geven over verschillende advertenties. Het onderzoek duurt ongeveer 10 minuten.

Het is belangrijk dat u in een rustige omgeving zit waarin u niet wordt afgeleid en u zich kunt concentreren op het onderzoek.

Deze enquête bevat 5 verschillende productadvertenties met daarbij bijbehorende slogans. Elke slogan dient u op verschillende aspecten te beoordelen.

Wij willen u erop attent maken dat het om de slogans gaat en niet om de productverpakkingen. Het gaat om uw eerste ingeving dus denk niet te lang na over de antwoorden.

Al uw antwoorden worden anoniem verwerkt.

Alvast bedankt voor uw medewerking!

Box 1 Survey introduction text

Once the respondent finished reading this introduction text and clicked the button to start the survey, the first demographic questions appeared on screen. These questions were followed up by questions regarding the first product advertisement. The questions concerning the concept buying behavior were introduced with a short text stating that the focus lies on the slogan

instead of the product. These questions and short introduction returned for each of the five product advertisements. After that the respondent faced a retention task, where the correct slogan had to be recalled. Lastly, the respondent was thanked for his or her participation.

The procedure was equal for all respondents, to prevent mediating effects to occur. Only the synaesthetic slogans used in the product advertisements varied, as this concerns our independent variable.

4.6 ANALYSIS

The demographic data is analyzed with the help of frequency tables in SPSS 17.0. After that, the data concerning the evaluation of synaesthetic metaphors was analyzed with a One-way ANOVA. This was done for each concept (suitableness, persuasion, liveliness, understandability and buying intention), so a clear analysis for each product category can be made. After that, the slogans were split up into three categories, concerning the mapping direction, which were analyzed with a One-way ANOVA as well. Finally the retention task was analyzed by using a One-way ANOVA as well, in order to investigate whether or not certain slogans are better recalled than others.

5. RESULTS

5.1 HYPOTHESIS 1

This analysis is executed according to five concepts. These concepts are: suitability, persuasion, liveliness, understandability and buying intention. This analysis is split up into advertisement type 1 up to advertisement type 5. Where advertisement 1 stands for toilet paper, 2 for coffee, 3 for deodorant, 4 for earplugs and 5 for wall paint. The synaesthetic metaphors that represent the slogan types can be found in figure 4. All concepts are analyzed with a one way ANOVA. The post hoc test Tukey HSD is used to see which slogan type means differ significantly from others.

5.1.1 SUITABLENESS

At first, the concept suitability is examined. Table 3 shows that there are some major differences between the slogan and advertisement types. For ad type 1, slogan 1 is better evaluated on suitability than the other four. In ad type 2, slogan numbers 2, 3 and 4 have a higher evaluation than the other two. Ad type 3 has higher evaluations for slogan 1,2 and 5, where ad 4 scores higher on slogan 2,3 and 5. Finally, the evaluation of slogan 2, 3 and 5 in ad 5 is higher than for the other slogans of ad 5. Table 4 shows whether or not the slogans differ significantly.

Ad type \ Slogan	1	2	3	4	5
1	5,00 (1,08)	3,32 (1,08)	4,04 (1,31)	2,76 (1,13)	3,22 (1,40)
2	1,85 (0,79)	4,74 (1,52)	6,24 (0,71)	4,75 (1,28)	5,24 (1,23)
3	2,30 (1,02)	5,53 (0,81)	2,79 (1,21)	4,15 (1,77)	3,32 (1,38)
4	2,07 (0,76)	5,70 (1,37)	5,11 (1,14)	1,66 (0,82)	4,65 (1,67)
5	2,79 (1,41)	3,38 (1,24)	3,00 (1,40)	5,16 (1,36)	5,37 (0,89)
Totaal	2,61 (1,45)	4,61 (1,57)	4,05 (1,77)	3,92 (1,80)	4,53 (1,57)

Table 3 Means and standard deviations for suitability

The slogans differ significantly from each other within each advertisement type. For advertisement type 1 this is ($F(4,156) = 44,16, p=.00$), for ad 2 it is ($F(4,159) = 21,70, p=.00$), ad 3 results in ($F(4,159) = 47,35, p=.00$), ad 4 is ($F(4,157) = 35,02, p=.00$) and for ad 5 it is ($F(4,151) = 17,46, p=.00$). A multiple comparison analysis shows which slogan types differ significantly from each other (Table 4).

In advertisement type 1, slogan 1's mean differs significantly from the means of all other slogans. The mean of slogan 2 is significantly different from the means of slogan 1 and 5. The means of slogan 3 and 4 only differ significantly from the mean of slogan 1. Slogan 5's mean, however, differs significantly from the means of slogan 1 and 2. Therefore, $1 > 3=4=5 > 2$.

In advertisement type 2, at first, the mean of slogan 1 differs significantly from the means of slogan 2,3 and 4. Secondly, the mean of slogan 2 differs significantly from the means of slogan 1, 3, 4 and 5. Thirdly, the means of slogan 3 and 4 are significantly different from the means of slogan 1, 2 and 5. Finally, the mean of slogan 5 shows a significant difference from the means of slogan 2, 3 and 4. Therefore, $3=4 > 2 > 1=5$.

In advertisement type 3, the means of slogan 1,2 and 4 are significantly different from the means of all other slogans. In addition, the means of slogans 3 and 5 differ significantly from the means of slogan 1,2 and 4. Therefore, $2 > 4 > 1 > 3=5$.

For advertisement type 4, the means of slogan 1 and 4 significantly differ from the means of all other slogans. Slogan 2's mean differs significantly from the means of slogan 1 and 4. The mean of slogan 3 is significantly different from the means of slogan 1, 4 and 5. At last, slogan 5's mean significantly differs from the means of slogan 1, 3 and 4. Therefore, $5=2=3 > 1 > 4$, where 5 is significantly different from 3.

Advertisement type 5 has significantly different results for the mean of slogan 1 opposed to the means of slogan 2,4 and 5. The means of slogans 2,4 and 5 then, differ significantly from the means of slogan 1 and 3. Finally, slogan 3's mean is significantly different from the means of slogans 2, 4 and 5. Therefore, $5=2=4 > 1=3$.

Slogan type	Slogan type	Ad type	1	2	3	4	5
1	2		.000*	.000*	.000*	.000*	.000*
1	3		.000*	.000*	.002*	.002*	.999
1	4		.000*	.000*	.016*	.032*	.004*
1	5		.000*	1.000	.006*	.000*	.000*
2	1		.000*	.000*	.000*	.000*	.000*
2	3		.290	.050*	.000*	.275	.000*
2	4		.898	.014*	.005*	.000*	.373
2	5		.001*	.000*	.000*	.675	.989
3	1		.000*	.000*	.002*	.002*	.999
3	2		.290	.050*	.000*	.275	.000*
3	4		.910	.968	.000*	.000*	.002*
3	5		.326	.000*	.935	.033*	.000*

4	1	.000*	.000*	.016*	.032*	.004*
4	2	.898	.014*	.005*	.000*	.373
4	3	.910	.986	.000*	.000*	.002*
4	5	.066	.000*	.000*	.000*	.262
5	1	.000*	1.000	.006*	.000*	.000*
5	2	.001*	.000*	.000*	.675	.989
5	3	.326	.000*	.935	.033*	.000*
5	4	.066	.000*	.000*	.000*	.262

Table 4 Significant level mean difference for suitability. The mean difference is significant at the 0.05 level (*)

5.1.2 PERSUASION

Secondly, the concept persuasion is examined. Table 5 shows that here again, some major differences occur between the slogan and advertisement types. For ad type 1, slogan 1 is better evaluated than the other four, but the overall scores are low. Slogan 3 in ad type 2 has the highest persuasion evaluation opposed to the other slogans. In advertisement type 3, the scores are again low, but slogan 2 and 5 have a higher evaluation than slogans 1,3 and 4. The same accounts for ad type 4, but here slogan 3 also receives a higher evaluation than the other slogans. Finally, for ad type 5, slogan 2 is better evaluated on persuasion than the other slogans. Table 6 shows whether or not the slogans differ significantly.

Ad type \ Slogan	1	2	3	4	5
1	3,74 (0,92)	4,13 (1,15)	3,19 (1,14)	3,81 (1,23)	3,34 (1,28)
2	2,48 (1,18)	4,46 (1,30)	4,63 (1,01)	4,72 (1,16)	4,86 (1,19)
3	2,40 (0,93)	4,92 (0,73)	2,83 (1,00)	4,42 (1,46)	3,54 (1,23)
4	2,82 (1,20)	4,33 (1,13)	4,63 (1,15)	2,59 (0,96)	4,06 (1,20)
5	3,12 (1,26)	3,86 (1,33)	3,33 (1,25)	4,45 (1,48)	4,58 (0,95)
Totaal	2,81 (1,20)	4,38 (1,20)	3,66 (1,33)	4,14 (1,45)	4,22 (1,30)

Table 5 Means and standard deviations for persuasion

The one way ANOVA shows that the evaluation of the slogans differs within each advertisement category. Advertisement 1 scores ($F(4,154) = 6,96, p=.00$), for type 2 this is ($F(4,160) = 3,38, p=.01$), ad 3 results in ($F(4,158) = 16,58, p=.00$), ad 4 leads to ($F(4,157) = 13,87, p=.00$) and finally ad 5 scores ($F(4,151) = 9,97, p=.00$). With a multiple comparison analysis, the significance values of the slogan types are revealed (Table 6).

In advertisement 1, the mean of slogan type 1 significantly differs from the means of slogan types 2,3 and 4. Besides that, the means of slogan 2, 3 and 4 differ significantly from the mean of slogan 1. The mean of slogan 5 does not lead to significant results. Therefore, $1=5 > 2=3=4$, where 5 does not differ significantly from the other slogans.

Advertisement type 2 scores low on significance. The mean of slogan 3 differs significantly from the mean of slogan 5 and vice versa. All the other slogans do not result in significant results. Therefore, $3=2=4=1=5$, where the means of slogan 3 and 5 do differ significantly.

For advertisement type 3, the means of slogan 1 and 3 differ significantly from the means of slogan 2 and 4. In addition, the mean of slogan 2, significantly deviates from the means of slogans 1,3 and 5. Besides that, the mean of slogan 4 deviates significantly from the means of slogan 1, 3 and 5. Finally, the mean of slogan 5 differs significantly from the means of slogans 2 and 4. Therefore, $2=4 > 5=1=3$.

At first, the mean of slogan 1 in advertisement type 4, deviates significantly from the means of slogans 2 and 4. Second, the mean of slogan type 2, significantly differs from the means of slogan types 1 and 4. Third, the mean of slogan type 3 only differs significantly from the mean of slogan type 4. Fourth, the mean of slogan 4 significantly deviates from the means of all other slogans. Finally, slogan 5's mean differs significantly from the mean of slogan 4. Therefore, $2=5=3=1 > 4$, where the mean of slogan 2 does significantly deviate from the mean of slogan 1.

The multiple comparison analysis of advertisement type 5 results in more significant results, compared to the previous advertisement type. The means of slogan 1 and 3 here, deviates significantly from the means of slogan 2 and 5. The mean of slogan 2 significantly differs from the means of slogan 1, 3 and 4. Besides that the mean of slogan 4 differs significantly from the mean of slogan 2. Finally, the mean of slogan 5 significantly deviates from the means of slogans 1 and 3. Therefore, $2=5 > 4=1=3$, where the mean of slogan 5 does not deviate significantly from the mean of slogan 4.

Slogan type	Slogan type	Ad type	1	2	3	4	5
1	2		.000*	.761	.000*	.031*	.000*
1	3		.000*	.091	.774	.409	.974
1	4		.036*	.971	.000*	.007*	.235
1	5		.281	.920	.986	.375	.004*
2	1		.000*	.761	.000*	.031*	.000*
2	3		.998	.413	.000*	.826	.000*
2	4		.701	.988	1.000	.000*	.036*

2	5	.107	.187	.000*	.882	.864
3	1	.000*	.091	.774	.409	.974
3	2	.998	.413	.000*	.826	.000*
3	4	.618	.300	.000*	.000*	.466
3	5	.103	.006*	.295	1.000	.009*
4	1	.036*	.971	.000*	.007*	.235
4	2	.701	.988	1.000	.000*	.036*
4	3	.618	.300	.000*	.000*	.466
4	5	.868	.568	.000*	.000*	.465
5	1	.281	.920	.986	.375	.004*
5	2	.107	.187	.000*	.882	.864
5	3	.103	.006*	.295	1.000	.009*
5	4	.868	.568	.000*	.000*	.465

Table 6 Significant level mean difference for persuasion. The mean difference is significant at the 0.05 level (*)

5.1.3 LIVELINESS

Thirdly, liveliness is evaluated as concept. The means and standard deviations can be seen in Table 7. Slogan 2 in ad type 1 is better evaluated on liveliness than the other slogans. For advertisement type 2 this is slogan 1. In advertisement type 3, slogan 4 and 5 receive a better evaluation than slogans 1, 2 and 3. In contrast, all slogans in advertisement 4 have a high evaluation, except for slogan 5. However, in advertisement 5, slogan 2 is better evaluated than all other slogans, where slogans 4 and 5 receive the lowest evaluation. Table 8 shows whether or not the slogans differ significantly.

Ad type \ Slogan	1	2	3	4	5
1	2,69 (1,02)	4,60 (1,11)	2,71 (0,89)	4,51 (1,07)	3,96 (1,18)
2	4,30 (1,27)	3,75 (1,19)	2,88 (0,97)	4,49 (1,03)	4,54 (1,10)
3	3,40 (0,91)	3,48 (0,78)	3,77 (0,92)	4,28 (1,17)	4,06 (1,28)
4	3,98 (0,82)	2,93 (0,91)	4,09 (1,23)	4,59 (1,35)	3,60 (1,16)
5	3,45 (1,28)	4,05 (1,25)	4,14 (1,07)	3,58 (1,24)	3,63 (0,88)
Totaal	3,68 (1,24)	3,74 (1,18)	3,63 (1,18)	4,32 (1,19)	4,05 (1,17)

Table 7 Means and standard deviations for liveliness

Within each advertisement type, the slogans differ significantly from each other. For advertisement type 1 this is ((F(4,151) = 10,07, p=.00), for ad 2 it is (F(4,157) = 8,69, p=.00), ad 3 results in (F(4,161) = 13,56, p=.00), ad 4 is (F(4,154) = 3,56, p=.01) and for ad 5 it is (F(4,151) = 4,62, p=.00). An analysis shows which slogan types differ significantly from each other (Table 8).

The mean of slogan 1 in advertisement type 1 significantly differs from the means of slogans 2 and 4. Slogan 2's mean differs significantly from all other means, except for the mean of slogan 4. Opposite to that, the means of slogan 3 and 5 only significantly deviates from the mean of slogan 2 and the mean of slogan 4 only differs significantly from the mean of slogan 1. Therefore, 2=4=5=3=1, where slogan 2 does significantly differ from slogans 5,3 and 1.

For advertisement 2, the mean of slogan 1 is significantly different from the means of slogan 2,3 and 4. Besides that, slogan 2's mean significantly deviates from the means of slogan 1 and 4. Opposite to that, the mean of slogan 3 only differs significantly from the mean of slogan 1. However, slogan 4's mean deviates significantly from the means of slogan 1, 2 and 5. Finally, the mean of slogan 5 significantly differs from the mean of slogan 4. Therefore, 1=5=2=3=4, where some slogans do significantly differ.

The means of slogan 1 and 2 for advertisement type 3, significantly deviate from the means of slogan 3,4 and 5. On the other hand, the means of slogan 3,4 and 5 are significantly different from the means of slogan 1 and 2. Therefore, 5=4=3 > 2=1.

For advertisement type 4, the means of slogan 1,2 and 4 are significantly different from the mean of slogan 5. This means that the mean of slogan 5 significantly differs from the means of slogan 1,2 and 4. The mean of slogan 3, therefore has no significant results with the other slogan's means. This results in: 4=1=2=3>5, where slogan does not deviate significantly.

Finally, the mean of slogan 2, for advertisement type 5, differs significantly from the means of slogan 4 and 5. In addition, the means of slogan 4 and 5 significantly deviate from the mean of slogan 2. The comparison of slogan 1 and 3 does not lead to significant results. Therefore, 2=3=1=5=4, where slogan 2 does significantly differ from slogan type 4 and 5.

Slogan type	Slogan type	Ad type	1	2	3	4	5
1	2		.000*	.014*	.975	1.000	.303
1	3		.143	.002*	.002*	.954	.998
1	4		.001*	.000*	.000*	.999	.823
1	5		.102	.352	.000*	.039*	.853
2	1		.000*	.014*	.975	1.000	.303
2	3		.007*	.801	.009*	.939	.331

2	4	.766	.012*	.000*	.996	.005*
2	5	.015*	.783	.000*	.010*	.006*
3	1	.143	.002*	.002*	.954	.998
3	2	.007*	.801	.009*	.939	.331
3	4	.328	.288	.750	.857	.543
3	5	1.000	.280	.506	.161	.584
4	1	.001*	.000*	.000*	.999	.823
4	2	.766	.012*	.000*	.996	.005*
4	3	.328	.288	.750	.857	.543
4	5	.434	.002*	1.000	.014*	1.000
5	1	.102	.352	.000*	.039*	.853
5	2	.015*	.783	.000*	.010*	.006*
5	3	1.000	.280	.506	.161	.584
5	4	.434	.002*	1.000	.014*	1.000

Table 8 Significant level mean difference for liveliness. The mean difference is significant at the 0.05 level (*)

5.1.4 UNDERSTANDABILITY

Fourthly, the concept understandability is analyzed. The means and standard deviations can be found in table 9. Table 9 shows that, for advertisement type 1, slogan 1 is higher evaluated on understandability than the other slogans. For advertisement type 2, slogan 1 received a lower evaluation than the other evaluated slogans. The same accounts for slogan 5 in advertisement type 3. Slogan 2,3 and 5 that belong to advertisement type 4 are better evaluated than slogan 1 and 4. For advertisement type 5, the better evaluated slogans are slogan 2 and 5. To examine whether or not these differences are significant a One-way ANOVA is conducted.

Ad type \ Slogan	1	2	3	4	5
1	5,23 (0,80)	3,98 (1,45)	4,28 (1,54)	2,64 (1,33)	3,18 (1,44)
2	2,35 (1,21)	4,90 (1,65)	6,40 (0,76)	4,88 (1,23)	5,29 (1,34)
3	2,73 (1,35)	5,69 (0,68)	2,87 (1,12)	4,81 (1,51)	3,38 (1,27)
4	2,16 (1,03)	5,49 (1,30)	5,34 (1,18)	1,89 (0,94)	4,33 (1,80)
5	3,67 (1,42)	5,14 (1,37)	2,95 (1,52)	5,14 (1,62)	5,33 (1,06)
Total	3,09 (1,59)	5,05 (1,45)	4,04 (1,85)	4,06 (1,84)	4,46 (1,64)

Table 9 Means and standard deviations for understandability

All slogans within the advertisement type differ significantly. For advertisement 1, the significant result is $(F(4,149)=30,45, p=.00)$. For advertisement 2 this is $(F(4,152)=6,51, p=.00)$. The result for advertisement 3 is $(F(4,151)=39,04, p=.00)$. $(F(4,150)=34,71, p=.00)$ is the result for advertisement type 4 and advertisement type 5 results in $(F(4,144)=15,43, p=.00)$. To examine which slogans differ significantly from each other a multiple comparison analysis is conducted. The results can be found in table 10.

At first, the means of slogan 1 and 5 in advertisement type 1 differ significantly from the means of all other slogans. The means of slogan 2 and 3 are significantly different from the means of slogan 1 and 5. Slogan 4's mean significantly deviates from the mean of slogan 1 and 5. Therefore, $1>5>3=2=4$.

Second, the mean of slogan 1 in advertisement type 2 significantly deviate from all other means, except for the mean of slogan 2. The mean of slogan 2, then, does not differ significantly from the other slogan's means. The means of slogan types 3,4 and 5 only significantly differ from the mean of slogan 1. Therefore, $3=4=5=2 > 1$, where slogan type 2 does not deviate significantly from slogan type 1.

Third, slogan 1's mean of advertisement type 3, significantly differs from the means of all other slogans. The same accounts for the means of slogan type 2 and 4. The means of slogan type 3 and 5, significantly deviate from the means of slogan 1, 2 and 4. Therefore, $2>4>1>5=3$.

Fourth, the means of slogan type 1 and 4 in advertisement type 4 significantly differ from the means of slogan 2,3 and 5. Slogan type 2's mean significantly deviates from the means of slogan types 1 and 4. This is the same for slogan types 3 and 5. Therefore, $5=2=3>1=4$.

Finally, slogan 1's mean in advertisement type 5 is significantly different from the means of slogan types 2,4 and 5. The mean of slogan 2 significantly deviates from the means of slogan 1, 3 and 4. Slogan 3's mean differs significantly from the means of slogan 2 and 5. The mean of slogan 4, then, significantly deviates from the means of slogan 1 and 2. Lastly, the mean of slogan 5 is significantly different from the means of slogan 1 and 3. Therefore, $5=2>4=3=1$, where slogan 5 does not significantly deviate from slogan 4.

Slogan type	Slogan type	Ad type	1	2	3	4	5
1	2		.000*	.056	.000*	.000*	.000*
1	3		.000*	.000*	.001*	.000*	.989
1	4		.000*	.001*	.031*	.283	.050*
1	5		.000*	.019*	.001*	.000*	.000*
2	1		.000*	.056	.000*	.000*	.000*
2	3		.659	.091	.000*	.999	.000*

2	4	.967	.375	.044*	.000*	.043*
2	5	.000*	.943	.000*	.920	1.000
3	1	.000*	.000*	.001*	.000*	.989
3	2	.659	.091	.000*	.999	.000*
3	4	.391	.980	.000*	.000*	.074
3	5	.031*	.529	.999	.872	.000*
4	1	.000*	.001*	.031*	.283	.050*
4	2	.976	.375	.044*	.000*	.043*
4	3	.391	.980	.000*	.000*	.074
4	5	.000*	.877	.000*	.000*	.065
5	1	.000*	.019*	.001*	.000*	.000*
5	2	.000*	.943	.000*	.920	1.000
5	3	.031*	.539	.999	.872	.000*
5	4	.000*	.877	.000*	.000*	.065

Table 10 Significant level mean difference for understandability. The mean difference is significant at the 0.05 level (*)

5.1.5 BUYING INTENTION€

Finally, the concept buying intention is examined. The means and standard deviations per advertisement and slogan type can be found in table 11. All slogans for advertisement type 1 are evaluated quite equal, where a 2.10 is the lowest score. Slogan 5 in advertisement type 2 is evaluated lower than the other slogans. Besides that, slogan 2 and 4 that belong to advertisement type 3 are better evaluated than the other slogans. For advertisement type 4 and 5, slogan 2 and 5 have a higher evaluation. To examine if these mean differences are significant, the significance values are shown in table 12.

Ad type \ Slogan	1	2	3	4	5
1	3,39 (1,20)	3,55 (1,53)	2,99 (1,45)	3,43 (1,46)	2,75 (1,31)
2	2,10 (1,04)	3,99 (1,59)	4,05 (1,40)	4,34 (1,52)	4,32 (1,51)
3	3,16 (0,75)	4,27 (1,24)	2,64 (1,11)	3,53 (1,76)	3,14 (1,31)
4	2,35 (1,22)	4,44 (1,13)	3,93 (1,34)	2,39 (1,38)	3,46 (1,21)
5	3,09 (1,33)	2,27 (1,46)	2,93 (1,62)	4,21 (1,41)	4,09 (1,19)
Total	2,73 (1,21)	3,74 (1,59)	3,20 (1,51)	3,69 (1,65)	3,68 (1,44)

Table 11 Means and standard deviations for buying intention

At first, the advertisement types are significant. For advertisement type 1 it is ($F(4,153) = 8,59$, $p=.00$) and for 2 it is ($F(4,151) = 10,69$, $p=.00$). Advertisement type 3 results in ($F(4,152) = 5,42$,

p=.00) and 4 leads to ($F(4,150) = 7,93, p=.00$). Finally advertisement type 5 notes ($F(4,145)=7,04, p=.00$). To see which slogans differ significantly, a multiple comparison analysis is executed.

In advertisement type 1, the means of slogan 1 and 3 differ significantly with the means of slogan 2 and 4. Slogan 2's mean, then, deviates significantly from the means of slogan 1, 3 and 5. The mean of slogan 4 significantly differs from the means of slogan 1 and 3. At last, slogan 5's mean differs significantly from slogan 2's mean. Therefore, $1=3=5 > 4=2$, where slogan 5 does not significantly differ from slogan 2.

The means of slogan 1, 2, 3 and 4 in advertisement type 2, significantly differ from the mean of slogan 5. This means that the mean of slogan 5 significantly deviates from all other means. Therefore, $4=3=2=1 > 5$.

The mean of slogan 1 in advertisement type 3 has no significant results with the other slogan's means. Opposite to that, slogan 2's and slogan 4's means are significantly different from the means of slogan 3 and 5. Besides that, the means of slogan 3 and 5 deviate significantly from the means of slogan 2 and 4. Therefore, $2=4=1 > 5=3$, where slogan 1 has no significant results with the other slogans.

For advertisement type 4, slogan 1's mean has no significant differences with the other means. Opposite to that, the means of slogan 2,3 and 5 deviate significantly from the mean of slogan 4. The mean of slogan 4, then, significantly differs from the means of slogan 2,3 and 5. Therefore, $2=5=3 > 1=4$, where slogan 1 has no significant differences with the other slogan.

Slogan 1's mean of advertisement type 5, significantly differs from the means of slogan 2 and 5. The mean of slogan 2 deviates significantly from the means of slogans 1 and 3. Slogan 3's mean is significantly different from the mean of slogan 2. However, the mean of slogan 4 has no significant results with the other means. Besides that, slogan 5's mean is significantly different from the mean of slogan 1. Therefore, $3=5=4=3=1$, where some means do significantly differ.

Slogan type	Slogan type	Ad type	1	2	3	4	5
1	2		.000*	.729	.107	.124	.000*
1	3		.946	.336	.893	.999	.847
1	4		.009*	.161	.131	.122	.372
1	5		.865	.011*	1.000	.345	.006*
2	1		.000*	.729	.107	.124	.000*
2	3		.001*	.919	.006*	.154	.003*
2	4		.880	.681	.998	.000*	.072
2	5		.002*	.000*	.026*	.996	.956

3	1	.946	.336	.893	.999	.847
3	2	.001*	.919	.006*	.154	.003*
3	4	.043*	.989	.006*	.048*	.894
3	5	.999	.000*	.892	.425	.053
4	1	.009*	.161	.131	.122	.372
4	2	.880	.681	.998	.000*	.072
4	3	.043*	.989	.006*	.048*	.894
4	5	.093	.000*	.026*	.000*	.395
5	1	.865	.01*	1.000	.345	.006*
5	2	.002*	.000*	.026*	.996	.956
5	3	.999	.000*	.892	.425	.053
5	4	.093	.000*	.026*	.000*	.395

Table 12 Significant level mean difference for buying intention. The mean difference is significant at the 0.05 level (*)

5.1.5 IN BRIEF

The analysis of the concept suitability points out that for advertisement type 1 (toilet paper), the slogan 'zijdezacht gevoel' receives a significant higher evaluation than the other slogans. The slogans 'aromatische smaak' and 'knallende smaak' in advertisement type 2 (coffee) are judged more positive than the other slogans, although the slogan 'bittere smaak' is better judged than the other two left. For advertisement type 3 (deodorant), the slogan 'milde geur' is evaluated better than the others, but this accounts for 'stille geur' and 'sensuele geur' as well. The slogans 'donker geluid', 'lekker geluid' and 'lavendelachtig geluid' from advertisement type 4 (earplugs) are better judged by the participants than the other two slogans. At last, for advertisement type 5 (wall paint), the slogans 'bonte kleur', 'zoete kleur' and 'sprekende kleur' are better evaluated on suitability than the other slogans.

Secondly, the concept persuasion is analyzed. Here, for advertisement type 1, the slogans 'zijdezacht gevoel' and 'mooi gevoel' receive a better evaluation than the other three slogans. The slogans 'milde geur' and 'frisse geur' that belong to advertisement type 3 score higher on persuasion than the other slogans. All slogans, except for the slogan 'oorverdovend geluid', score relatively high on persuasion. The slogans 'zoete kleur' and 'bonte kleur' that belong to advertisement type 5 are better judged than the other slogans in this category.

The third evaluated concept is liveliness. The slogan 'zoetig gevoel' in advertisement type 1 is better evaluated than the other slogans, except for the slogan 'fluisterend gevoel'. For advertisement type 2, the slogan 'stevige smaak' is better judged than the other slogans, except for the slogan 'heldere smaak'. The slogans 'kleurige geur', 'stille geur' and 'frisse geur' of

advertisement type 3 score higher on the concept persuasion than the other two slogans. For advertisement type 4, the slogans 'oorverdovend geluid', 'warm geluid' and 'lekker geluid' receive a better evaluation than the other slogans. The slogan 'zoete kleur' that belongs to advertisement type 5 is better judged than the slogan 'bonte kleur' that belongs to the same advertisement type.

Fourthly, the concept understandability is examined. Advertisement type 1's slogan 'zijdezacht gevoel' received the highest evaluation on understandability, followed by the slogan 'mooi gevoel' and the rest. The slogan 'stevige smaak' of advertisement type 2, had the lowest evaluation compared to the other slogans. For advertisement type 3, the slogans 'milde geur', 'stille geur' and 'sensuele geur' are better judged than the other two slogans. The slogans 'donker geluid', 'lekker geluid' and 'lavendelachtig geluid' of advertisement type 4, received better evaluations than the other two slogans. The two slogans that are evaluated the highest for advertisement type 5 are 'bonte kleur' and 'zoete kleur'.

Lastly, the concept buying intention was analyzed. Here, the slogans 'zijdezacht gevoel', 'bloemig gevoel' and 'mooi gevoel' of advertisement type 1 were better evaluated than the other two slogans. For advertisement type 2, all other slogans received higher scores on buying intention than the slogan 'heldere smaak'. Of the slogans in advertisement type 3, the slogans 'milde geur', 'stille geur' and 'sensuele geur' were judged best on buying intention. The slogans 'lekker geluid', 'donker geluid' and 'lavendelachtig geluid' - that belong to advertisement type 4 - are best evaluated. Finally, for advertisement type 5, the slogans 'zoete kleur' and 'sprekende kleur' are better evaluated than the other slogans.

5.2 HYPOTHESIS 2

To examine whether or not synaesthetic metaphors that map according to the so-called lower to higher mapping structure are evaluated as more persuasive when the source domain possesses characteristics that are not in line with the product, a One-way ANOVA is executed. At first, all synaesthetic metaphors were divided among 5 groups: 'low-high', 'high-low', 'equal', 'low-high x' and 'high-low x'. The 'x' in the group name represents the presence of characteristics that are in line with the product. All synaesthetic metaphors that consist of a source and target domain that stand for the same sense modality are grouped together in the group 'equal'. The significant results ($F(4,800)=17,85$, $p=.00$) of the analysis are portrayed in table 13. In addition, table 14 shows which groups differ significantly from each other.

Mapping group	Mean (st. deviation)
Low-high	4,22 (1,33)
High-low	3,34 (1,45)
Equal	3,76 (1,35)
Low-high x	4,13 (1,15)
High-low x	4,43 (1,17)

Table 13 Means and standard deviations of synaesthetic metaphors evaluated on persuasion

Mapping	Low-high	High-low	Equal	Low-high x	High-low x
Low-high	x	.000*	.005*	.998	.832
High-low	.000*	x	.017*	.046*	.000*
Equal	.005*	.017*	x	.716	.013*
Low-high x	.998	.046*	.716	x	.892
High-low x	.832	.000*	.013*	.892	x

Table 14 Significant level mean difference persuasion. The mean difference is significant at the 0.05 level (*)

As table 14 shows, the mean of the 'low-high' group significantly deviates from the means of the high-low and equal groups, but not from the groups that represent the synaesthetic metaphors that possess a source domain that consists of product characteristics that are in line with the product. The mean that belongs to the 'high-low' group, differs significantly from the means of all other groups. Besides that, the 'equal' group's mean is significantly different from the means

of all other groups, except for the group 'low-high x'. The opposite accounts for the 'low-high x' group, while this group's mean only deviates significantly from the 'high-low' group. At last, the mean of the group 'high-low x' significantly differs from the means of the groups 'high-low' and 'equal'.

5.3 HYPOTHESIS 3

To analyze the recall of synaesthetic metaphors, frequency tables are created for each advertisement type. In these tables the amount of correct, partly correct and incorrect recalls are shown. Here, a hyphen stands for 0% and when the total does not add up to 100%, the difference represents the missing values. After that, a one-way ANOVA is used to examine if there are significant differences between the slogans. With a multiple comparison analysis, the exact significant slogans are revealed.

At first, table 15 shows the recall data of advertisement type 1 (toilet paper). Immediately, slogan 1 attracts attention, because this slogan is recalled more than the other slogans. Although, the other four slogans are recalled often as well. However, slogan 2 has the highest 'not recalled' score, while the highest 'incorrect' score belongs to slogan 4. The one-way ANOVA points out that these results are significant ($F(4,148)=2,701$, $p=.03$). The slogan that shows a significant difference is slogan 1. The result for this slogan deviates significantly from the results of slogan 2 and 5.

Slogan	Correct	Partly correct	Incorrect	Not recalled
Zijdezacht gevoel	85,7	9,5	-	4,0
Zoetig gevoel	50,0	15,2	15,2	19,6
Bloemig gevoel	51,6	29,0	9,7	9,7
Fluisterend gevoel	51,9	11,1	22,2	11,1
Mooi gevoel	42,9	21,4	21,4	14,3

Table 15 recall data of advertisement type 1 (in %)

Second, table 16 displays the recall data of advertisement type 2. This table shows bigger differences than table 15. At first, 85,7% of the respondents recalled slogan 5 correctly, while 35,5% of the respondents remembered slogan 3 perfectly. In addition, slogan 2 has the highest score on the item 'not recalled', but the second highest on the item 'correct'. Finally, slogan 4 is third on the list of 'correct' recall, but also second on 'incorrect' recall. According to the one-way ANOVA, these scores are significant ($F(4,148)=10,958$, $p=.00$). Especially the result of slogan 3 is significantly different from the results of all other slogans of advertisement type 2.

Slogan	Correct	Partly correct	Incorrect	Not recalled
Stevige smaak	52,4	33,3	4,8	9,5
Bittere smaak	67,4	10,9	4,3	17,4
Aromatische smaak	35,5	-	61,3	3,2
Knallende smaak	63,0	11,0	14,8	7,4
Heldere smaak	85,7	7,1	3,6	3,6

Table 16 Recall data of advertisement type 2 (in %)

Third, the recall data of advertisement type 3 are presented in table 17. Here, the respondents recalled slogan 5 best, but slogan 1,2 and 4 are remembered well too. In contrast, slogan 3 is remembered by less respondents, namely 48,4%. These results, however, do not significantly differ ($F(4,152)=1,076, p=.37$).

Slogan	Correct	Partly correct	Incorrect	Not recalled
Sensuele geur	81,0	9,5	-	9,5
Milde geur	79,3	10,3	6,9	3,4
Frisse geur	48,4	22,6	12,9	16,1
Stille geur	74,1	11,1	3,7	7,4
Kleurige geur	91,5	4,3	2,1	2,1

Table 17 Recall data of advertisement type 3 (in %)

Fourth, table 18 presents the recall data of advertisement type 4. All slogans are recalled well, namely by 63% of the respondents or higher. The best recalled slogan is slogan 1, with 95,2%. In addition, slogan 3 has a high 'correct' score, but also the highest 'partly correct' score. These slogans significantly differ ($F(4,150)=4,742, p=.00$). The result of slogan 3 deviates significantly from the results of slogan 1,4 and 5.

Slogan	Correct	Partly correct	Incorrect	Not recalled
Warm geluid	95,2	-	-	4,8
Lekker geluid	76,0	6,0	10,0	8,0
Lavendelachtig geluid	74,2	16,1	9,7	-
Oorverdovend geluid	63,0	11,1	11,1	11,1
Donker geluid	71,4	14,3	14,3	-

Table 18 Recall data of advertisement type 4 (in %)

Finally, the recall results of advertisement type 5 are displayed in table 19. Again, all slogans are well recalled by the respondents, where 61,3% is the lowest amount. Slogan 5, however, is recalled by most respondents, namely 96,4%. According to a one-way ANOVA, these scores are significantly different ($F(4,149)=3,086$, $p=.02$). However, the slogans do not significantly differ from each other. The result for slogan 2 compared to slogan 5, gets the closest to alpha (.05), namely with a .052.

Slogan	Correct	Partly correct	Incorrect	Not recalled
Warme kleur	71,4	14,3	9,5	4,8
Zoete kleur	66,0	10,6	14,0	8,5
Bloesemachtige kleur	61,3	19,4	9,7	9,7
Sprekende kleur	88,9	-	3,7	3,7
Bonte kleur	96,4	-	3,6	-

Table 19 Recall data of advertisement type 5 (in %)

Besides the results between slogan types, the result for mapping structure is analyzed as well. As table 20 shows, the synaesthetic metaphors that map according to the so-called lower to higher mapping structure are significantly better recalled than metaphors that map via the inverse pattern ($F(2,796)=6,452$, $p=.00$). A multiple comparison analysis points out that all means significantly deviate, except for the mean of the group where two of the same sensory modalities map into each other (equal). This mean does not differ significantly from the mean of the 'low-high' group.

Mapping type	Mean (standard deviation)
Low-high	1,48 (0,93)
High-low	1,76 (1,16)
Equal	1,52 (1,04)

Table 20 Means and standard deviation of recall mapping types (where 1 stands for remembered correctly and 4 for incorrect remembrance).

6. CONCLUSION

On the basis of the results, hypothesis 1 can be partially confirmed. Overall, the synaesthetic metaphors that map according to the so-called lower to higher mapping structure, receive higher evaluations on suitability, persuasion, understandability and buying intention than the inverse mapping form. However, mostly the mean of a synaesthetic metaphor that maps according to the lower to higher structure that stands out, is not remarkable higher than the notable mean of its opposite. Contrary to that, this does not account for the item liveliness, here no particular mapping structure stands out. Besides that, the linear mapping structure proposed in the theoretical framework turns out to be less linear than expected.

Furthermore, the results support the assumption that a synaesthetic metaphor with a source domain that possesses characteristics that are not in line with the product and a lower to higher mapping structure, will be evaluated as more persuasive. However, these results are only significant when compared to the same type of synaesthetic metaphor, but with a higher to lower mapping structure. When compared to a different type, a synaesthetic metaphor with a source domain that does possess characteristics that are in line with the product, the results are not significant.

At last, hypothesis 3 can be confirmed to a large extent. Synaesthetic metaphors that map via the lower to higher mapping pattern are better recalled than synaesthetic metaphors that use the higher to lower mapping structure. But, it is notable that a few synaesthetic metaphors that belong to the higher to lower mapping group, stand out with significantly better recall results, while the scores on the other concepts are average to low. This accounts for the slogan 'kleurige geur', that has a recall percentage of 91,5%, while the second highest percentage is 81,0% and for the slogan 'heldere smaak', which has a recall percentage of 85,7%, followed up by a recall of 67,4%.

7. DISCUSSION

This study intended to provide evidence for the better evaluation of the so-called lower to higher mapping structure when compared to its inverse. Moreover, in relation to various concepts such as persuasion and recall. Despite the fact that the lower to higher mapping pattern was generally evaluated better than its inverse, the so-called lower to higher mapping pattern turned out to be less linear than suggested. An explanation for this could be that the lower to higher mapping structure as proposed by Ullman (1957 as cited in Shen & Cohen, 1998; Werning et al., 2006 and Shen & Aisenman, 2008) is less plausible than presumed. Werning et al. (2006) propose another model that results from their own research combined with influences from Ullman's (1957 as cited in Shen & Cohen, 1998; Werning et al., 2006 and Shen & Aisenman, 2008) and Williams' (1976 as cited in Werning et al., 2006) model. This model suggests that not all mapping paths lead to equally strong results. Figure 5 shows the possible directionalities according to their (Wening et al., 2006) data. They propose that touch is the best mapping modality and sound and smell are relatively bad, compared to the others.

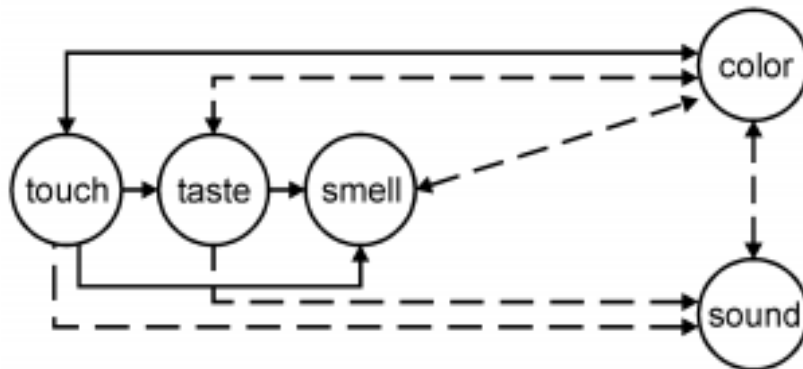


Figure 5 Blackarrows show significant enhancement, while dotted lines represent not significantly impeded directions (Werning et al.,2006)

A second reason for the changing results, might be the choice of product categories. Nelson & Hitchon (1995) describe that many print advertisements that contain cross sensory references are for perfumes and other transcendental or emotional products. It might be that synaesthetic metaphors do not reach the desired effect, when used for products that cannot fit into the category 'fantasy goods'. This might explain the relatively low scores on for example persuasion, understandability and recall of the slogans that belong to the product category toilet paper.

A third and final reason for the varying results might be the effect of frequency and morphological derivation (Werning et al., 2006). These two concepts enhance or limit the accessibility of synaesthetic metaphors. An example of morphological derivation is 'lavendelachtig geluid', here the source domain 'lavendelachig' is morphed from the noun 'lavendel'. In addition, Nelson & Hitchon (1999) describe another phenomenon that might

explain the results of this study, namely the 'dead' metaphorical expression. A 'dead' expression is an expression that lost its effect due to the cliched use, it has been used in this form too much.

This phenomenon can also be used to explain the remarkable results found when analyzing hypothesis 3. The high recall of the synaesthetic metaphors that map according to the high to low pattern, might be a result of the use of 'dead' metaphors. The synaesthetic metaphors 'kleurige geur' and 'heldere smaak' might be used often in this form and therefore, participants might remember these metaphors easier.

Limitations & Recommendations

The non-significant results of hypothesis 2 can be ascribed to the group sizes of the metaphor categories. Two large groups (the low-high and high-low) are compared to two substantial smaller groups. Therefore, the internal validity of this analysis is not very high. Because of that, the results might be very different when all groups are equal. That is why, in further research, the group amounts should be kept equal in order to achieve a higher internal validity.

Another aspect that has a negative effect on the internal validity is the absence of a control condition. Especially when analyzing the recall, a control condition is necessary to see whether or not the recall percentages are higher for synaesthetic metaphors than for literal language. A control condition might also be desirable in the analysis of hypothesis 2, so a firm conclusion about the persuasiveness of synaesthetic metaphors can be formulated. Therefore, further research, should implement a control condition to increase the internal validity of the study.

Besides the improvements that are needed to reach a higher internal validity, the external validity needs improvements as well. The majority of the participants were female and had VWO as the highest completed education. Therefore, the results of this study may not be generalized. Therefore, it is important that future research approaches a broader target group. This to enhance the external validity of the experiment.

As a final recommendation, the research environment should be shifted to a more realistic space. In this study the questionnaire was taken online, but included print advertisements of random products. These products might be products that a participant has a bad experience with or does not like beforehand. This might have influenced the research data. This is why further research should be aware of the moderation effects of environment and product experience. It might be a solution to ask about the participants' product experience.

In conclusion, this study provides some evidence for the persuasive ability of synaesthetic metaphors, but has a few limitations that need to be taken into account in further research. Aspects as a control condition, group numbers, target group, product experience and research environment should be discussed before developing a research design.

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APPENDIX 1 - PRODUCT ADVERTISEMENTS USED

Toilet paper



Coffee



Deodorant



Earplugs



Wall paint



APPENDIX 2 – SURVEY

Beste deelnemer,

Voor onze opleiding Communicatie- en Informatiewetenschappen doen wij een onderzoek naar het optimaliseren van productadvertenties. Daarom vragen wij u om uw oordeel te geven over verschillende advertenties. Het onderzoek duurt ongeveer 10 minuten.

Het is belangrijk dat u in een rustige omgeving zit waarin u niet wordt afgeleid en u zich kunt concentreren op het onderzoek.

Deze enquête bevat 5 verschillende productadvertenties met daarbij bijbehorende slogans. Elke slogan dient u op verschillende aspecten te beoordelen.

Wij willen u erop attent maken dat het om de slogans gaat en niet om de productverpakkingen.
Het gaat om uw eerste ingeving dus denk niet te lang na over de antwoorden.

Al uw antwoorden worden anoniem verwerkt.

Alvast bedankt voor uw medewerking!

Persoonlijke gegevens:

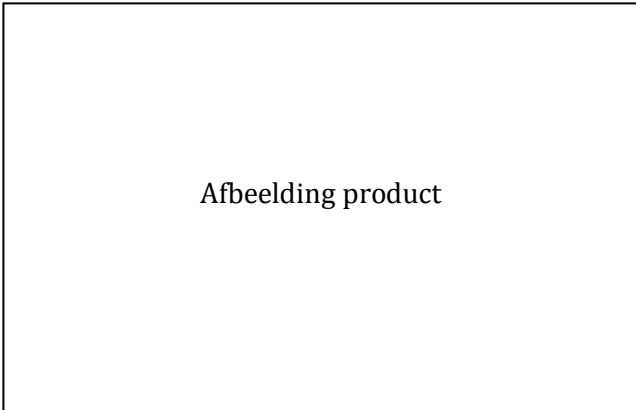
Wat is uw leeftijd?

....

Wat is uw geslacht? Man/Vrouw

Wat is uw hoogst afgeronde opleiding?

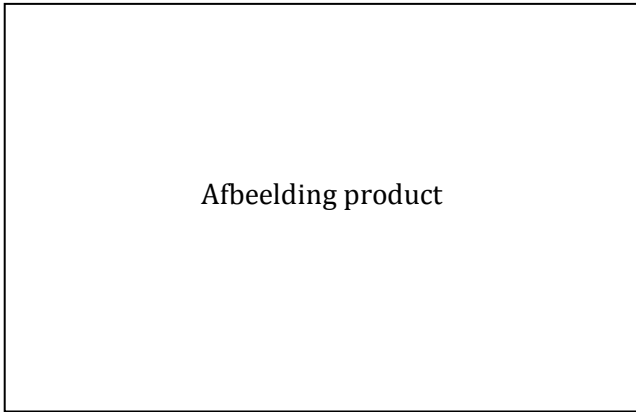
- Basisonderwijs
- VMBO/LTS/LHNO (huishoudschool)
- HAVO
- VWO/gymnasium
- MBO/MTS
- HBO/HTS
- Universiteit
- Anders...



Afbeelding product

Deze slogan is.. (omcirkel het antwoord wat uw mening weergeeft)

Ongebruikelijk	1	2	3	4	5	6	7	Gebruikelijk
Krachtig	1	2	3	4	5	6	7	Zwak
Onduidelijk	1	2	3	4	5	6	7	Duidelijk
Afgezaagd	1	2	3	4	5	6	7	Vernieuwend
Ongeloofwaardig	1	2	3	4	5	6	7	Geloofwaardig
Opwindend	1	2	3	4	5	6	7	Saai
Ongeschikt	1	2	3	4	5	6	7	Geschikt
Helder	1	2	3	4	5	6	7	Vaag



Afbeelding product

Geef aan in hoeverre u het eens bent met de volgende stellingen:

<i>Deze slogan is interessant</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan past bij de advertentie</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan is duidelijk</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan is levendig</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan sluit aan bij de advertentie</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan is origineel</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan is overtuigend</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens
<i>Deze slogan is begrijpelijk</i>								
Zeer oneens	1	2	3	4	5	6	7	Zeer eens

Afbeelding product

Hieronder volgen enkele stellingen over of uw koopintentie, geef aan in hoeverre u het eens bent met de volgende stellingen

Dit product zou ik willen hebben

Zeer oneens 1 2 3 4 5 6 7 Zeer eens

Deze slogan zou mij aanzetten tot het kopen van dit product

Zeer oneens 1 2 3 4 5 6 7 Zeer eens

Als ik dit product in de winkel zie liggen zou ik het meenemen

Zeer oneens 1 2 3 4 5 6 7 Zeer eens

Ik zou voor dit product geld over hebben

Zeer oneens 1 2 3 4 5 6 7 Zeer eens

U heeft zojuist 5 verschillende advertenties met hun slogans gezien. Hieronder zijn de producten zonder slogans weergegeven. Probeer u de slogans zich te herinneren en onder de producten te schrijven. Mocht u het echt niet meer weten, kunt u het vakje 'weet ik niet meer' aanvinken.

Plaatje WC papier

Slogan:

- Weet ik niet meer

Plaatje deo

Slogan:

- Weet ik niet meer

Plaatje koffie

Slogan:

- Weet ik niet meer

Plaatje oortjes

Slogan:

- Weet ik niet meer

Plaatje verf

Slogan:

- Weet ik niet meer