**THE WHOLE vs. SUM OF PARTS**

The battle on composite logos: the whole versus the sum of its parts.

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**ABSTRACT**

**Purpose:** Exploring the effects and striking features of composite logos and testing the findings on knowledge, attitude and behaviour in an experiment with newly developed composite logos.

**Methodology/approach:** A total of 202 participants have contributed to this study: 10 consumers were interviewed with projective techniques, 6 experts with a profession in logos were interviewed, 12 respondents tested all stimuli and 174 students participated in the experiment.

**Findings:** Composite logos affect the perceived feminine and masculine brand personality of a company. The effects on brand personality and logo evaluation were moderated by the visual acumen of people. No effects were found on company knowledge or behavioural intention.

**Practical implications:** Composite logos can be used to realize a feminine brand personality. The usability, strength and direction of this effect is determined by the elements within and the type of product the composite logo is used for. This could be a high aesthetic and designer product or a product in which aesthetic design plays no role. It is assumed that people with high visual acumen are more attracted to aesthetically designed products than those with low visual acumen.

**Originality/value:** Effects of composite logos have not been examined in existing research and offer a rich basis for new literature on several aspects. Results and preliminary research showed a reciprocal relationship between the individual elements within and the overall figure.

**Keywords:** composite logos, visual acumen, reciprocal relationship, semiotics, iconic and symbolic modes of relationship, feminine and masculine brand personality, logo evaluation.
INTRODUCTION

Is the sum of the parts of a composite logo greater than the whole composite logo or vice versa? This study is the showdown between those two opponents with a background in the field of marketing and corporate communication. Both fields of expertise target to affect the KAB (Knowledge, Attitude and Behaviour) of people. The targets are either to sell products by focussing on the needs of consumers (marketing) or build a relationship with internal and external groups of interest (corporate communication). The effort to change the KAB of people is based on the assumption that changes in behaviour result from knowledge and attitudinal changes. Knowledge and attitudinal changes can also be realised by cognitive dissonance induced by people justifying or rationalizing their actions (Festinger, 1957). An important aspect within the field of marketing and corporate communication is the focus on the use of a company logo.

Company logos appear on television, packaging, letterhead, business cards, signs in print advertisements, annual reports and product designs. It is one of the main vehicles in communicating image, cutting through clutter to gain attention and speeding recognition of the product or company (Henderson & Cote, 1998). Aaker (1997) wrote ‘When products and services are difficult to differentiate, a logo can be the central element of brand equity, the key differentiating characteristic of a brand’. In business there are enormous amounts of time and money spent on promoting logos (Rubel, 1994). Logos are part of the Corporate Visual Identity (CVI) of a company. Van den Bosch, de Jong and Elving (2005) described the main elements of a CVI to be ‘corporate name, logo, colour palette, font type, and a corporate slogan or tagline’.

The effectiveness, in reaching positive affect, creating meaning and enhancing recognition of logos, has been sharpened over years. This resulted in “Guidelines for selecting and modifying logos” (Henderson & Cote, 1998), “Creating effective logos” (Kohli, Suri & Thakor, 2002) and “Selecting the visual compounds of image to maximize brand strength” (Henderson, Cote, Leong & Smith, 2003). Van Riel and Van den Ban (2001) stated that logos have the potential to express organizational characteristics. Stafford, Tripp and Bienstock (2004) found that the perceived image of a logo can influence organizational perceptions. If one observes a certain element within a composite logo that stands for ‘quality’, such as the five-stars for a good quality hotel, they should perceive the company or its products as higher in quality. Van den Bosch et al. (2005) stress a causal connection between the CVI and the attitude towards a company.

There are two levels in which logos affect memory; recognition and recall. Recognition is consumers remembering the logo from seeing it before, while recall is remembering the name of
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the company when the logo appears without the company name (Henderson, et al. 2003). Henderson et al. (2003) stressed that most organizations use their company name with their logo. As most companies use their company name with their logo (although some companies transition to using just their logo e.g., Nike or Shell) recognition is the most universally desirable memory effect for a logo (Henderson, et al. 2003).

Unilever, a British/Dutch owned food and personal care multinational, designed a new logo to be displayed on all packaging. It was based on a ‘Path-to-growth’ plan in 2003 and the number of product brands was reduced from 1,600 to 400 to clearly position Unilever in the minds of customers (Van den Bosch, 2005). If you examine the aspects of the Unilever logo it becomes clear that it is a composition of several smaller elements (Fig. 1). These types of logos are named composite logos and differ from other logos by the elements inside that together constitute the composite logo. Since the Unilever logo was introduced, there are a number of organizations that started using a composite logo. Unilever can therefore be seen as a trend setter for this type of logos.

Henderson et al. (2003) emphasize that even when images do not interact with the accompanying word (e.g. Tony the Tiger symbol and Frosted Flakes cereal) they improve memory for that word (Barret, 1985; Biron & McKelvie, 1984; McKelvie, Cooper & Monfette, 1992). Since pictures are more quickly perceived than words, even the briefest exposures can result in some message being received (Edell & Stealin, 1983). Any accompanying picture can create an association with a target word, i.e. give meaning to a brand name (Scott, 1994). Each element within a composite logo can be seen as a small accompanying picture with a different meaning. Can a composite logo communicate the meaning of each element or are these elements too small to create those associations. In this study we investigate the value of the individual elements on KAB by comparing the effects of composite logos with meaningful elements versus composite logos with non-meaningful elements. The primary research question for this study is:
**Q1:** To what extent can composite logos with meaningful elements influence knowledge, attitude and behaviour of consumers compared to composite logos with non-meaningful elements?

**Semiotics**

To make a distinction between the different meanings of the elements within composite logos we use semiotics. Semiotics provides insight into how meanings are made and how reality is represented (Chandler, 2007). There are two important concepts that need to be addressed for this paper, the signifier and the signified. People describe the signifier as the form that a sign takes (elements within composite logos) and the signified to what it refers (meaning of the elements within composite logos) (Chandler, 2007). For example, the word ‘open’ (when it is exposed to someone who encounters it on a shop doorway) is a sign consisting: 1) a signifier: the word ‘open’ and 2) a signified concept: that the shop is open for business. The same signifier (the word ‘open’) could stand for a different signified (and thus be a different sign) if it were on a push-button inside a lift (‘push to open door’). Although the signifier is treated by its users as ‘standing for’ the signified, there is no direct or inevitable relationship between both. It is this arbitrariness that helps to account for a wide range of interpretations for the meaning that can be assigned to logos or the elements within.

Logos with clear meanings are better liked, transfer more positive effects to the company and are better recognized compared to logos with ambiguous meanings (Schechter, 1993). Henderson et al. (2003) speak of clear meanings when people within the same culture assign the same meaning to a stimulus, called stimulus codability. These effects are desirable for building brands. Codable stimuli are perceived, interpreted and remembered better compared to stimuli that do not evoke consensual meanings (Hershenson & Haber, 1965; Rodewald & Bosma, 1972; Smith & Wallace, 1982). Henderson et al. (2003) stress that meaningful logos require less investment to achieve memory benefits in comparison with non-meaningful logos. In semiotics there are three modes of relationship between signifiers and their signified. A brief study among existing composite logos learned that two of these three modes of relationships are used within composite logos. In this study we investigate the effects of composite logos with iconic or symbolic elements compared to non-meaningful abstract elements on the knowledge about characteristics of a company.

**Q2:** To what extent can symbolic and iconic elements within composite logos communicate company knowledge to consumers?
In this study company knowledge includes values and attributes so that both the symbolic and iconic composite logo contain values as well as attributes. This distinction was made based on the semiotic mode of relationship between the elements. A symbol has a general meaning signifying ‘a kind of thing’ such as values and an icon has a specific meaning signifying ‘a specific thing’ such as attributes (Chandler, 2007).

Iconic elements have a mode of relationship between signifier en signified in which the signifier is perceived as resembling the signified. They are similar by possessing some of its qualities, e.g. a portrait or scale-model. The depicted light bolt, in figure 2, is not an exact reproduction of how a light bolt looks in reality but resembles it on important aspects. Even the most realistic image is not a replica of what is depicted, this is one of the reasons that we mistake a representation for what it represents (Chandler, 2007). The meaning of an iconic element can be derived from the resemblance with reality. Values of a company are more comprehensive and not specific which would make it difficult to communicate values with iconic elements. In this study it is expected that the specific nature of iconic elements should lead consumers to the conclusion that the depicted characteristics pertain to the company using it.

**H₁**: Composite logos with iconic elements are more adequate in communicating company attributes (part of company knowledge) compared to composite logos with symbolic elements.

Symbolic elements have a mode of relationship in which the signifier does not resemble the signified and the relationship is purely conventional. The relationship must be agreed upon and learned e.g. language in general and national flags. What are called ‘symbols’ in popular usage would be regarded as ‘signs’ of some kind by semioticians, but many of them would not technically be classified as purely ‘symbolic’ (Chandler, 2007). For instance, if we joke that ‘a thing is a phallic symbol if it is longer than it is wide’, this would allude to resemblance and, make it at least partly
We interpret symbols according to ‘a rule’ or ‘habitual connection’ and they have to be agreed upon and learned by culture.

The first left-top element in the logo of Unilever (figure 3 on page 6) is defined by Unilever as ‘Sparkle: clean, healthy and sparkling with energy.’ It does not resemble something in the real world and for this element to be understood; people had to agree on its meaning, which makes it conventional. Unilever wants people to associate this element ‘energetic’ as a value of their brand. Values of a company are more comprehensive and a general concept. The more general and ‘kind of thing’ nature of symbolic elements should lead consumers to the conclusion that the depicted company values pertain to the company using it. In this study it is expected that symbolic elements are more adequate in communicating company knowledge about values because of the more general and ‘kind of thing’ character corresponding with the key concept of values.

Figure 3: Part of logo Unilever

**H2:** Composite logos with symbolic elements are more adequate in communicating company values (part of company knowledge) compared to composite logos with iconic elements.

The perceptions about an organization can be described as brand personality. The brand personality is defined as “the set of human characteristics associated with a brand” (Aaker, 1997). Brand personality can be influenced by the visually articulated image in a logo (Stafford et al., 2004). Brand personality serves a symbolic or self-expressive function beyond the utilitarian function of company Knowledge. Consumers prefer symbolic meanings that are associated with brands that portray distinct personalities. This provides people the opportunity to portray the “self” that he or she wants to reveal (Belk, 1988; Solomon, 1983). It is expected that symbolic elements are more adequate in communicating brand personality than iconic elements. The more general and ‘kind of thing’ character of symbolic elements matches the key concept of brand personality items. In this study it is expected that symbolic elements are more adequate in communicating
brand personality because of the more general and ‘kind of thing’ character corresponding to characteristics of brand personality items.

**H3**: Composite logos with symbolic elements are more adequate in communicating brand personality than composite logos with iconic elements.

When considering all these aspects one should wonder, do composite logos actually influence the behaviour of consumers? Research of Wansink, Westgren and Cheney (2005) showed that when people have more knowledge of a company it positively affects the behavioural intention. Woo, Chang-Hoan & Hyuck Joon (2008) also found that the attitude towards the CVI logo had a direct influence on purchase intentions. In this study it is expected that if a composite logo proved to communicate company knowledge to consumers or affect the attitude towards a company that the behavioural intention towards a company should increase.

**H4**: Composite logos with meaningful (iconic or symbolic) elements are more adequate in increasing the behavioural intention towards a company compared to composite logos with non-meaningful (abstract) elements.

**Visual acumen**

The effects on KAB of consumers discussed above may (very well) vary per person. Fang and Mowen (2005) found that the effects of logo design on the attitude towards the firm and the perceived firm modernness were moderated by visual arts orientation (an equivalent of visual acumen). Loewy (1951) stressed that some consumer segments are more design-oriented than others. The response of people to visual aesthetics influences how products are comprehended and evaluated (Forty, 1986). Bloch, Brunel and Arnold (2003) mention that these individual differences may underlie a number of other well-established consumer behaviour variables such as product involvement, brand loyalty, innovativeness, choice and usage behaviour. They constructed the centrality of visual product aesthetics scale (Bloch et al., 2003).

It gives insight in how people evaluate the design of products. One of the dimensions of this scale concerns the visual acumen of people, an individual trait that also could be applied to visual orientation in general. Visual acumen reflects an ability to recognize, categorize and evaluate visual aspects or designs and is expected to vary between populations (Osborne, 1986). Csikzentmihalyi
and Robinson (1990) described this as ‘the good eye’ for analysing visual arts and Gasset (1925) speaks of ‘artistic sensibility which people are gifted with’. Bloch et al. (2003) show a moderating effect of their complete scale on aesthetics evaluations, product attitudes and purchase intentions. It is expected that the individual trait visual acumen should realise this same moderating effect with composite logos. People with high visual acumen pay more attention to visual aspects and get more information out of the composite logo. And people with low visual acumen on the other hand, are less able in extracting information out of composite logos. It is expected that people with high visual acumen (compared to people with low visual acumen) extract more information out of both iconic and symbolic composite logos because their higher ability to extract information.

**H5**: The effect of composite logos with iconic elements on company knowledge is moderated by visual acumen: people with high visual acumen extract more company knowledge about attributes out of the composite logo compared to people with low visual acumen.

**H6**: The effect of composite logos with symbolic elements on company knowledge is moderated by visual acumen: people with high visual acumen extract more company knowledge about values out of the composite logo compared to people with low visual acumen.

Henderson et al. (2003) stressed that meaningful logos require less investment to achieve memory benefits in comparison with non-meaningful logos. Iconic elements have a direct relationship with reality, which could be seen as a relatively low level of information. And symbols have a more indirect learned relationship which could be seen as a relatively high level of information. In this study it is expected that the amount of information people are able process and the amount presented to them, affects their attitude towards a company. People with low visual acumen would therefore appreciate iconic elements (with an appropriate low level of information) instead of symbolic elements, compared to people with high visual acumen who would appreciate symbolic elements more (with an appropriate high level of information) instead of iconic elements.

**H7**: The effect of composite logos on brand personality is moderated by visual acumen: people with low visual acumen score higher on brand personality with iconic elements compared to the symbolic elements and people with high visual acumen score higher on brand personality with symbolic elements compared to the iconic elements.
In summary, logos can influence perceptions in differentiating a brand when used solely as a symbol to be depicted in media. But can also influence organizational perceptions depending on the perception of consumers. Furthermore, its combination of facets can convey the particular characteristics of a brand or product (Scott, 1994). The message that the facets convey may depend on the mode of relationship. In this study we investigate the effects of composite logos with either iconic or symbolic elements compared to composite logos with abstract elements on company knowledge, brand personality and behavioural intention. The hypotheses that were outlined above are visualized in the conceptual research model as shown in figure 4.

**Figure 4: Conceptual research model**

**METHOD**

In order to realise effective manipulations and formulate relevant questions, a comprehensive preliminary research was conducted. Experts and consumers were interviewed by using both semi-structured in-depth and projective interviewing techniques. Figure 5 shows the research design that was used to test the hypotheses and answer the research questions. The interviews explored the effects and striking features of existing composite logos. All stimuli for the experiment were pretested. Finally the effects of the newly developed composite logos, based on the described preliminary research, were investigated in an experimental setting.

**Figure 5: Research design**
Overview interviews

The six experts consisted of a composite logo designer, managers of organizations with composite logos, a visual communication teacher and an experienced DTP professional. Since the profession of this group concerned logos, questions were on a more advanced and strategic level compared to the questions for consumers. Experts were asked to give their thoughts about the underlying goals of the logos. They were also asked whether they think the creator used specific design elements and for which organizations the logos could be used best (see appendix A).

Ten consumers were selected at-random (every tenth consumer who checked out and is leaving with a full shopping cart) in a nearby supermarket to make an individual appointment at a later time. Each consumer interview lasted about 20 to 30 minutes. It concerned two out of four logos printed in high definition on a black presenting board. Educational levels ranged from undergraduates to PhD students. All consumers received a diner voucher with a value of 25 euro.

The interviews started with a brief introduction of the researcher and the study. The focus was on the visual characteristics of the logos instead of the company using it. Permission was asked to make an audio recording of the interview. Both experts and consumers were presented one logo at a time and asked to give their views and thoughts on it. Consumers completed a sorting task; they had to assign items of the brand personality scale (Aaker, 1997) to the presented logo.

The previously discussed modes of relationship, symbolic and iconic, were represented by one known and one unknown logo, see figure 6 for the used logos. Notice that both modes also have a typeface logo (the ‘U’ and the ‘11’) and a natural logo (a ‘butterfly’ and the ‘tree’).

![Logos with symbolic elements](image1)

![Logos with iconic elements](image2)

Figure 6: Existing composite logos

Results interviews

Experts are divided in their opinion if composite logos are a trend. 1 out of 6 experts indicated that the high femininity and low masculinity of this type of logos would probably turn out to be an
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important aspect in the experiment. They also criticise composite logos as ‘non-original’ and ‘non-aesthetic’. 3 out of 6 experts stress that a logo is only a small aspect and part of all corporate communication elements and that ‘it is quite possible’ that the only results will be found on the evaluation of the composite logos itself and not on knowledge, attitude and behaviour. Logo evaluation will therefore be included as dependant variable in the experiment.

Individual elements. Larger elements within the logos are noticed before the smaller elements. To ensure a good approximation of reality the ratio of the larger elements to the overall figure should be similar to existing composite logos. Measuring of all available existing composite logos showed that when a large element within is 1 inch wide, then the overall figure should be approximately 6,5 inch wide. Recognition of the symbolic elements is important for granting meaning. A higher percentage of recognition was noticeable for the easy ‘Gemeente Oost Gelre’ elements compared to the more difficult ‘Unilever’ elements. It is important that the used symbolic elements have high stimulus codability, there has to be consensus by multiple people over the meaning of the elements. The elements will be pretested for the experiment to ensure reliability.

Overall figure. The overall figure determines how people give meaning to the individual elements within the logo; there is a reciprocal relationship between both. For instance, the overall figure is a butterfly in the composite logo of Gemeente Oost Gelre (see figure 7) which is viewed as ‘nature’. Consumers analyse the element bicycle (right-below) as ‘cycling in nature’. Consumers view the elements as extra information about the company. And they expect a logo to say something about the characteristics of an organization. It emerged in the interviews that consumers grant meaning to the iconic elements in two ways: 1) The direct relationship that the signifier has with what is signified, for example a T-shirt that stands for clothing. And 2) A combination of iconic elements, for instance an airplane together with a bus are viewed as standing for ‘travel’ or ‘transport’.

Figure 7: butterfly of Gemeente Oost Gelre
Brand Personality items. Consumers describe composite logos in terms of diversity, wide range of products and/or activities and versatility. They assigned the following brand personality items to composite logos in the sorting task: imaginative, care, comfort, modern, pure, friendly, cheerful, lively, young and feminine. They did not assign the composite logos with brand personality items as: cool, glamorous, messy, chaotic, upper-class, tough, rugged and masculine. It is striking that there is clear dichotomy between masculine and feminine brand personality items in the sorting task. Experts stressed that femininity and masculinity were important and this was confirmed by the dichotomy in assigned items by consumers in the sorting task. Therefore a distinction was made between feminine and masculine brand personality items and both will be included as dependent variables in the experiment.

Study 1: Experiment

Overview and participants

The present study is an experimental 3 (logo: symbolic vs. iconic vs. abstract) * 2 (low vs. high visual acumen) between-subjects design. The composite logo with non-meaningful abstract elements was the control condition for the composite logos with meaningful iconic or symbolic elements. A total of 174 participants (83 male and 91 female; mean age: 21.66, SD = 4.20; 120 Dutch and 54 German Nationality) were divided at-random into the six conditions. Education of the participants varied between lower and higher professional education (26%), Bachelor (61%) & Master undergraduates (11%) and PhD students (2%). The study was conducted in the research-lab of Behavioural Sciences at the University of Twente.

The experimenter led participants into cubicles where they were asked to complete questions about the individual trait visual acumen (Bloch, 2003) and their demographics. They were asked to extensively read a description about a fictitious company called 'Pijlvast'. Pijlvast had both service and manufacturing characteristics, it was a building contractor combined with a house-agent. Then participants were directed to open the envelope next to the monitor and carefully study the found picture of a streetscape in which a composite logo was depicted. Next they responded to questions about feminine and masculine brand personality, logo evaluation, company knowledge about attributes and values and behavioural intention. All students received a € 6,- fee for participating.

Stimulus material

Composite logos. Three composite logos were developed based on requirements for size and number of elements and overall figure. The iconic and symbolic elements were selected out of 22
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symbols and 15 icons by 6 female and 6 male respondents in the pretest by using online questionnaires. Respondents assessed the elements and those with most similar reactions on recognition and meaning were selected to ensure high stimulus codability. Respondents received a gift card with a value of 7,50 euro for participating.

Iconic elements were depictions of company values: 1) the target group family, 2) a happy customer, and depictions of company attributes: 3) flats / apartments, 4) Factory / company building, 5) key, and 6) a contract with pen.

![Figure 8: Iconic elements](image)

Symbolic elements used were depictions of company attributes: 1) a house with energy label A, 2) a university graduation Cap for intelligent personnel, 3) magnifying glass and www depicted for the search function on the internet site, and depictions of company values: 4) a Dog for loyal / reliable company / personnel, 5) four-leaf clover for good luck in finding an appropriate house, and 6) five stars for high quality services or products.

![Figure 9: Symbolic elements](image)

The overall figure looked like a house and could also be interpreted as an arrow (Dutch translation of ‘Pijl’ in Pijlvast). Finally the size and placement of the abstract elements was based

![Figure 10: New developed composite logos](image)
on the placement and size of elements within both the iconic and symbolic elements. All three composite logos were depicted in a blue colour in the picture with a streetscape (see appendix A).

Respondents were also asked to rate four photos of potential streetscapes on 5-point Likert type scales concerning five items of appropriateness. The items included businesslike, representative and professional to realise the streetscape to be as realistic as possible. The streetscape with the highest average score (Cronbach's $\alpha = .87$) was selected (see appendix A).

**Moderator**

*Visual acumen.* The visual acumen of individuals was measured by a Dutch-translation (see appendix A) of the questions used by Bloch (2003). Participants were asked to rate four questions on a 7-point Likert-type scale ($1 = $ not at all descriptive of me, $7 = $ extremely descriptive of me). An index was made by averaging the four scales (Cronbach’s $\alpha = .79$). The statements included the ability to see subtle differences in product designs, seeing things in a product design that other people tend to pass over, having the ability to imagine how a product will fit in with already owned designs and having a good idea of what makes one product look better than its competitors.

**Dependent variables**

*Company knowledge.* Participants responded to 6 statements for company knowledge about values or attributes pertaining to each iconic element (see appendix A) and 6 statements pertaining to each symbolic element on 7-point Likert-type scales ($1 = $ Not at all descriptive, $7 = $ extremely descriptive). The 6 iconic statements ($M = 3,60$, $SD = 0,99$) and the 6 symbolic statements ($M = 3,85$, $SD = 1,20$) were both computed to an average index. Each statement belonged to one attribute or value and concerned whether it was (or not) characterizing Pijlvast. For example the statement for iconic element 1: the target group of Pijlvast is family, and the statement for symbolic element 1: Pijlvast is specialized in houses with the energy label A.

*Feminine brand personality.* Based on preliminary research, feminine brand personality was included and consists out of four feminine items: cheerful, lively, young and feminine. Items were scored on 5-point Likert-type scales for degree of descriptiveness concerning Pijlvast ($1 = $ not at all descriptive, $5 = $ extremely descriptive) and an average-index was made (Cronbach’s $\alpha = .73$).
Masculine brand personality. Based on preliminary research, masculine brand personality was included and consists out of four masculine items: tough, upper-class, rugged and masculine. Items were scored on 5-point Likert-type scales for degree of descriptiveness concerning Pijlvast (1 = not at all descriptive, 5 = extremely descriptive) and an average-index was made (Cronbach’s $\alpha = .51$). Despite the relative low internal consistency masculine brand personality was included because all four items showed the same trend in the graph per individual item.

Logo evaluation. Based on preliminary research, the evaluation of the composite logo was included and measured on perceived trendiness and distinctiveness (see appendix A). Items were scored on 5-point Likert-type scales (1 = not at all descriptive, 5 = extremely descriptive) and computed into an average-index.

Behavioural intention. To measure the behavioural intention towards Pijlvast, participants responded to five statements (see appendix A) on 7-point Likert-type scales (1 = totally disagree, 7 = totally agree). The statements included choosing and considering Pijlvast, recommending Pijlvast to family, consulting Pijlvast for a second opinion and visiting a location of Pijlvast before considering. Items were computed into an average-index (Cronbach’s $\alpha = .80$).

RESULTS

Company knowledge. A two-way between-group analysis of variance was conducted to analyse the effect of composite logo and visual acumen on knowledge about iconic attributes and values for Pijlvast. The main effect ($F(2,168) = 1.03, ns.$) and interaction effect ($F(2,168) = 1.23, ns.$) proved not to be significant. Then a two-way between-group analysis of variance was conducted to analyse the effect of composite logo and visual acumen on knowledge about symbolic attributes and values for Pijlvast. The main effect ($F(2,168) = 0.32, ns.$) and interaction effect ($F(2,168) = 0.16, ns.$) proved not to be significant. The results did not confirm hypothesis $H_1$ and $H_2$, composite logos with iconic or symbolic elements neither communicated company knowledge about attributes nor values. The results did not confirm hypothesis $H_5$ and $H_6$, the effect of composite logos with iconic or symbolic elements on company knowledge is not moderated by visual acumen. People with low or high visual acumen did not extract more or less company knowledge about attributes or values out of the composite logos with either iconic or symbolic elements.
Brand personality. A two-way between-group analysis of variance was conducted to analyse the effect of composite logo and visual acumen on feminine brand personality. There is a main effect for composite logo: the composite logo with iconic elements realizes a higher feminine brand personality ($M_{icon} = 3.16$, $SD_{icon} = 0.10$) compared to the composite logos with symbolic elements ($M_{symbol} = 2.90$, $SD_{symbol} = 0.10$) and abstract elements ($M_{abstract} = 2.72$, $SD_{abstract} = 0.11$; $F(2,162) = 4.70$, $p = .01$). Then a two-way between-group analysis of variance was conducted to analyse the effect of composite logo and visual acumen on masculine brand personality. The main effect ($F(2,168) = 0.18$, ns.) proved not to be significant.

The unexpected main effect of composite logos on feminine brand personality and the lack of a main effect for composite logos on masculine personality is the reason for not confirming hypothesis $H_3$, composite logos with symbolic elements are not more adequate in communicating brand personality than composite logos with iconic elements. The effect is different than expected, composite logos with iconic elements realised the highest feminine brand personality followed by symbolic elements and the abstract elements realised the lowest score.

Since Feminine brand personality, masculine brand personality and logo evaluation are added to the study based on preliminary research there were no separate hypotheses. The results on these variables are therefore discussed below as a part of hypothesis $H_7$ (see page 18).

Feminine brand personality. The results show a marginal significant interaction effect (figure 11): visual acumen moderates the effect of composite logo on feminine brand personality ($F(2,162) = 2.62$, $p = .08$). The effect of composite logo on feminine brand personality is stronger for people with low visual acumen in the condition with iconic elements ($M_{icon} = 3.34$, $SD_{icon} = 0.13$) than the effect in the condition with symbolic ($M_{symbol} = 2.80$, $SD_{symbol} = 0.14$) and abstract elements ($M_{abstract} = 2.80$, $SD_{abstract} = 0.13$). Pair wise comparison for people with low visual acumen differ significant between the iconic condition and both the symbolic and abstract condition ($p_{symbol} < 0.01$).

And the effect of composite logo on feminine brand image is (negatively) stronger for people with low visual acumen in the condition with iconic elements ($M_{icon} = 3.40$, $SD_{icon} = 0.13$) than the effect in the condition with symbolic ($M_{symbol} = 2.80$, $SD_{symbol} = 0.14$) and abstract elements ($M_{abstract} = 2.80$, $SD_{abstract} = 0.13$). Pair wise comparison for people with low visual acumen differ significant between the iconic condition and both the symbolic and abstract condition ($p_{symbol} < 0.01$).

Figure 11: interaction effect on feminine brand personality
Effects of composite logos for participants with high visual acumen in the abstract condition ($M_{\text{abstract}} = 2.65$, $SD_{\text{abstract}} = 0.17$) than the effect in the condition with iconic ($M_{\text{icon}} = 2.99$, $SD_{\text{icon}} = 0.15$) and symbolic elements ($M_{\text{symbol}} = 3.06$, $SD_{\text{symbol}} = 0.14$). Pair wise comparison showed a marginal significant effect for participants with high visual acumen between the abstract and symbolic condition ($p_{\text{symbol}} = 0.07$). Pair wise comparison for the effect of composite logo on feminine brand personality for people with high visual acumen showed no significance between the iconic and symbolic condition.

**Masculine brand personality.** The results show a significant interaction effect (figure 12): visual acumen moderates the effect of composite logo on masculine brand personality ($F(2,168) = 5.51$, $p < .01$). The effect of composite logo on masculine brand personality is stronger for people with low visual acumen in the iconic condition ($M_{\text{icon}} = 2.64$, $SD_{\text{icon}} = 0.10$) compared to the symbolic ($M_{\text{symbol}} = 2.27$, $SD_{\text{symbol}} = 0.11$) and abstract condition ($M_{\text{abstract}} = 2.53$, $SD_{\text{abstract}} = 0.10$). Pair wise comparison for people with low visual acumen showed a significant effect between the iconic condition and the symbolic condition ($p_{\text{symbol}} < 0.05$). The effect of composite logo on masculine brand personality is stronger for people with high visual acumen in the symbolic condition ($M_{\text{symbol}} = 2.71$, $SD_{\text{symbol}} = 0.11$) than the iconic ($M_{\text{icon}} = 2.33$, $SD_{\text{icon}} = 0.12$) and abstract condition ($M_{\text{abstract}} = 2.58$, $SD_{\text{abstract}} = 0.14$). Pair wise comparison for people with high visual acumen showed a significant effect between the symbolic and iconic condition ($p_{\text{symbol}} < 0.05$).

**Logo evaluation.** A two-way between-group analysis of variance was conducted to analyse the effect of composite logo and visual acumen on logo evaluation. The main effect proved not to be significant ($F(2,168) = 1.73$, *ns*). There is a significant interaction effect (right graph in figure 11): visual acumen moderates the effect of composite logo on logo evaluation ($F(2,168) = 4.09$, $p < .05$). The effect of composite logo on logo evaluation is significant stronger for participants with low visual acumen for composite logos with iconic elements ($M_{\text{icon}} = 3.05$, $SD_{\text{icon}} = 0.15$) compared to symbolic elements ($M_{\text{symbol}} = 2.54$, $SD_{\text{symbol}} = 0.17$) and abstract elements ($M_{\text{abstract}} = 2.49$, $SD_{\text{abstract}} = 0.15$). Pair wise comparisons for participants with low visual acumen showed that the
difference between the iconic elements and both symbolic and abstract elements is significant ($p_{\text{abstract}} < 0.05$, $p_{\text{symbol}} < 0.05$).

There is also a significant interaction effect for participants with high visual acumen, they evaluate composite logos with symbolic elements ($M_{\text{symbol}} = 3.40$, $SD_{\text{symbol}} = 0.16$) higher on logo evaluation compared to composite logos with iconic elements ($M_{\text{icon}} = 2.98$, $SD_{\text{icon}} = 0.18$) and abstract elements ($M_{\text{abstract}} = 2.95$, $SD_{\text{abstract}} = 0.20$). Figure 13 shows the interaction effect for composite logo and visual acumen of participants on logo evaluation. Pair wise comparison showed a marginal significant effect for participants with high visual acumen between composite logos with symbolic elements and both abstract and iconic elements ($p_{\text{abstract}} = 0.08$, $p_{\text{icon}} = 0.08$).

The results confirmed hypothesis $H_7$, the effect of composite logos on brand personality is moderated by visual acumen. The interaction effect applies to feminine and masculine brand personality as well as logo evaluation (see graphs in figure 14). People with low visual acumen score significant higher on feminine and masculine brand personality when exposed to iconic elements compared to symbolic elements. People with high visual acumen score significant higher on feminine and masculine brand personality when exposed to the composite logo with symbolic elements compared to iconic elements. Pair wise comparison for high visual acumen and feminine brand personality between the iconic and symbolic condition was non-significant.

Figure 13: interaction effect on logo evaluation

Figure 14: Interaction effects on feminine brand personality, masculine brand personality and logo evaluation.
**Behavioural intention.** A two-way between-group analysis of variance was conducted to analyse the effect of composite logo and visual acumen on the behavioural intention. The main effect \( (F (2,168) = 0.55, \text{ns.}) \) and the interaction effect \( (F (2,168) = 0.36, \text{ns.}) \) proved not to be significant. The results did not confirm hypothesis \( H_4 \), composite logos with neither meaningful (iconic or symbolic) nor non-meaningful (abstract) elements affected the behavioural intention.

**GENERAL DISCUSSION**

This study explored the effects of composite logos with meaningful (iconic or symbolic) elements versus composite logos with non-meaningful (abstract) elements on KAB of consumers. KAB was operationalized in company knowledge about attributes or values, feminine and masculine brand personality, logo evaluation and the behavioural intention. In this section we will discuss why the effects are found (or not) and what this means in relation to the used literature, preliminary research and practical implications. Based on the discussed results we can answer the primary research question of this study \( (Q_1) \): *Composite logos did not affect knowledge and behaviour of consumers, but did have a main effect on feminine brand personality and an interaction effect with visual acumen of people on feminine and masculine brand personality and logo evaluation.*

*Company knowledge.* There were no results found on the communication of company knowledge about attributes or values by composite logos with meaningful iconic or symbolic elements. To answer the second research question \( (Q_2) \) based on the results of this study: *both iconic and symbolic elements did not communicate company knowledge.* This contradicts with literature of Edell and Stealin (1983), they stressed that pictures are more quickly perceived than words and that even the briefest exposures can result in some message being received. In the experiment students were instructed to carefully study the picture of a streetscape in which a composite logo was depicted. Although the emphasis was not on studying the logo but the streetscape, the exposure can be defined as longer than average. Arbitrariness for the meaning assigned to the elements is not an explanation for the lack of results because the elements were pretested to ensure high stimulus codability. The statement of Edell and Stealin (1983) is not quite true, this study shows limitations to brief exposures and some message being received.

Since there are results on attitude it is possible that the composite logos were viewed as a combination of elements, which emerged in the preliminary research, resulting in a more 'kind of thing' concept. For example an airplane together with a bus was viewed as standing for 'travel' or
‘transport’. This more general perspective of composite logos could be explained by Gestalt psychology (Bruce, Green & Georgeson, 1997). People should perceive quite dissimilar elements as belonging together by the continuity and proximity within the composite logo (Bruce et al., 1997). Composite logos could therefore be viewed as a bundle of information instead of a combination of individual aspects which would explain the main effect on feminine brand personality.

Brand personality. A main effect of composite logos on feminine brand image was found and interaction effects of composite logos and visual acumen of people on feminine and masculine brand image and logo evaluation. The extent of the main effect on feminine brand personality and the lack of a main effect on masculine brand personality will be discussed first, followed by the three interaction effects of visual acumen.

Composite logos are generally seen as feminine and the extent of this effect is determined by the elements within. Iconic elements realised the highest feminine brand personality followed by symbolic elements and the lowest score was realised by abstract elements. Since high femininity is in line with low masculinity, the lack of a significant result on masculine brand personality is notable. This can be explained by the items used for measuring masculine brand personality, which were not the direct opposite of feminine brand personality items. The operationalisation was based on the sorting task completed by consumers in the preliminary research. Feminine brand image consisted out of the values ‘cheerful’, ‘lively’, ‘young’ and ‘feminine’ and were not the complete antonym of masculine brand personality items as ‘tough’, ‘upper-class’, ‘rugged’ and ‘masculine’.

The main effect on feminine brand personality, iconic elements score higher than symbolic elements and abstract elements, contradicts with expectation that symbolic elements are more adequate in communicating brand personality based on their ‘kind of thing’ character which is in line with the key concept of brand personality items. This contradicting result together with the lack of results in communicated knowledge supports the assumption that composite logos are viewed as a bundle of information.

We can use the reciprocal relationship found in the preliminary research to understand the contents of the bundle of information. The elements in the logo of V&D (see figure 6 on page 10) were viewed as a ‘collection of things’ rather than different product groups. This means that the composite logos were viewed as a collection of things in and around the house, which can be determined as mainly feminine. Henderson et al. (2003) stressed that meaningful logos require less investment to achieve perceptual and memory benefit compared to non-meaningful logos. This together with assumption on the level of difficulty of information of the elements (iconic versus
symbolic) within composite logos, which will be discussed in relation with visual acumen, offers an explanation for the extent to which composite logos affect feminine brand personality. Abstract elements realised the lowest score on feminine brand personality with non-meaningful elements. Symbolic elements realised a mediate score on feminine brand personality with their ‘kind of thing’ nature in which the meaning is not obvious and direct. And the iconic elements realised the highest feminine brand personality with their concrete, obvious and direct meaning. This effect cannot be attributed to the characteristics of the individual elements itself because they were not viewed as separate elements but as a bundle of information. The turning point of people viewing it as a house with a collection of things (bundle of information) or a house with specific characteristics (combination of individual aspects) has to be further examined.

There was no literature found where composite logos directly affect brand personality and that the meaning given to composite logos is established by a reciprocal relationship between the elements within and the overall figure. Reproduction of these results in another study can constitute an important basis for new literature. Some implications are made for future research that can be a major contribution to the success of this reproduction.

Visual acumen. Visual acumen moderated the effects of composite logos on feminine and masculine brand personality and logo evaluation. The graphs of those three interaction effects (figure 14 on page 17) show a clear trend between iconic/symbolic elements and low/high visual acumen. People with low visual acumen score higher on the three attitude variables with iconic elements (with an appropriate low level of information) instead of symbolic elements. People with high visual acumen score higher on the three attitude variables with symbolic elements (with an appropriate high level of information) instead of iconic elements. The abstract elements were the control condition and do not show a specific trend (besides from being in the middle or low range).

Fang and Mowen (2005) also found moderating effects of visual acumen on attitude towards a company and perceived modernness of a company. Visual acumen reflects an ability to recognize, categorize and evaluate visual aspects or designs and is expected to vary between populations (Osborne, 1986). The lack of interaction effects on communicated knowledge by individual elements and these three interaction effects on attitude support the expectation that the amount of information people are able to process and the amount they are presented affects their attitude by the meaning of the combination of elements. Future research could give more insight in the relation between the amount of information people are able to process and the amount presented.
Behavioural intention. Neither composite logos with meaningful iconic or symbolic elements nor composite logos with non-meaningful abstract elements realized an effect on behavioural intention. Wansink et al. (2005) stressed that more knowledge positively affects the behavioural intention. Since no knowledge was communicated, it is logical that there was no effect on behavioural intention. The lack of behavioural intention it is not in line with the study of Woo et al. (2008), they found that the attitude towards the CVI logo had a direct influence on purchase intentions. Since there are effects found on logo evaluation, some limitations should be made to the conclusion that attitude towards a logo affects behavioural intention. The differences between this study and the study of Woo et al. (2008) are the operationalisation of the concept attitude and the used logos. This study used logo evaluation on trendiness and distinctiveness and Woo et al. (2008) used positive/negative evaluations of the logo as favourable/unfavourable. The key difference between both studies is the familiarity logos. Woo et al. used existing logos of real companies and this study used newly developed composite logos for a fictitious company. It is not hard to imagine that in practice it is inconceivable that only seeing, or even having an attitude towards, a new logo would realise a change in behaviour towards a company you do not know.

Implications for future research

This study showed that composite logos expressed organizational characteristics about feminine and masculine brand personality, as stressed by Van Riel and Van den Ban (2001) and Stafford et al. (2004), but there was no direct evidence in this study that composite logos communicate organizational characteristics about attributes or values. A possible explanation could be that composite logos are viewed as a bundle of information instead of a combination of individual aspects. Scott (1994) stressed that any accompanying picture can create an association with a target word. Future research should establish the turning point in which several elements within a composite logo are viewed as a bundle of information and when they are viewed as individual aspects within a composite logo. An experiment with a composite logo with two or three elements would be a good starting point. A manipulation check for each element, to ensure that each element is actually seen by the participants, is a requirement that should not be forgotten.

The lack of a main effect on masculine brand personality could be explained by the fact that the items used for measuring masculine brand personality were not the direct opposite of feminine brand personality items. The use of correct antonyms in future research should result in significant results on both opposite values. For example, positive and negative are correct antonyms.
The reciprocal relationship between the overall figure and the elements within, which emerged in the preliminary research, is interesting. The overarching concept of the overall figure gives meaning to the elements within (e.g. cycling in nature) and vice versa. Preliminary research showed that the type of overall figure moderates this effect: natural elements give meaning and typeface elements are viewed as factual information. This interaction was not represented because the overall figure (house and/or arrow) in the experiment did not suit one of both types of overall figures (natural vs. typeface). Topics of future research on overall figure and elements within could be congruence (versus incongruence) on natural/typeface or feminine/masculine characteristics. Van den Bosch et al. (2005) also made an interesting distinction between the type of product/organisation in service and manufacturing characteristics. It is important to take the mode of relationship (iconic and symbolic) in consideration when constructing new composite logos.

**Practical Implications**

This study showed that composite logos can be used to realize a higher feminine brand personality. The usability of this effect is determined by the elements within and the type of products the composite logo is used for. Composite logos with iconic elements realized the highest feminine brand personality. Furthermore, visual acumen is an important factor in assessing the extent, strength and direction to which the effects can be expected. Loewy (1951) stressed that some consumer segments are more design-oriented than others. The results of this study show that it may be worthwhile to consider the extent to which the success of your product depends on aesthetic characteristics. It is plausible to assume that people with high visual acumen are more attracted to aesthetically designed products than those with low visual acumen. Thus, it is not your target group that should be considered but the aesthetic characteristics of your product.

To put the findings of this study into practice it is useful to remember the following. If you want to emphasize your high aesthetic and designer products with a feminine brand personality you should avoid using abstract elements, but neither iconic nor symbolic elements succeeded in realizing a strong feminine brand personality. And if you want to emphasize your high aesthetic and designer products with a masculine brand personality it is recommended to use symbolic elements and avoid using abstract elements and certainly avoid using iconic elements.

And on the other hand, if you want to market products, in which aesthetic design plays no role, by emphasizing a strong feminine brand personality you should use iconic elements and avoid using either symbolic or abstract elements. If you want to emphasize those products with a
masculine brand personality it is recommended to search for an alternative option. It is not advisable at all to use a composite logo for that type of products because iconic, symbolic as well as abstract elements realized a negative score on masculinity.

**Conclusion**

There are some practical implications that can be made based on this study, but these are based on the assumption that people with high visual acumen are more attracted to aesthetically designed products than those with low visual acumen. Future research should study this assumption, the assumption that the amount of information people are able to process and the amount they are presented affects their attitude and the before mentioned implications for future research to get more insight in the effects and usability of composite logos and its characteristics.

The first sentence of this paper questioned whether the sum of the parts of a composite logo is greater than the whole composite logo or vice versa. In this study different strengths of those two opponents have emerged. The final score of the battle between both opponents was dominated by a third opponent, not the whole (overall figure) or the sum of its parts (the elements) but rather the combination of both is the winner of the fight. In future it is valuable to consider the combination of the elements within a composite logo, the overall figure and the reciprocal relationship between both to make the strongest possible combination with specific characteristics of both the whole and the sum of its parts.
LITERATURE


APPENDIX A

Questions preliminary research

Questionnaire Experts

Waarom heeft jullie organisatie voor dit (zowel als icoontjes als overkoepelende vorm) logo gekozen? (sinds wanneer is het in gebruik?)
Welke overwegingen hebben eraan vooraf gelegen? Wat gaf doorslag?
Wat is de gedachte achter het logo? Hoe tot stand gekomen?
Waarom denk je dat deze overkoepelende vorm is gekozen?
Wat vind je van het logo (waarom vind je dat, hoe belangrijk vind je dat?)
Denken je dat deze logo's een trend zijn? 6 jaar na Unilever (2002) zijn er namelijk nog steeds organisaties die zulke logo's laten ontwikkelen?
Voor welke organisaties zijn deze logos geschikt? (welke branche / tastbaar versus ontastbaar / uitstraling modern en kwaliteit)
Wat zijn de voordelen/ nadelen van dit logo / type logo's?

Questionnaire Consumers

Kijk eens naar het logo, wat is je eerste reactie? (wat voor beelden en woorden komen er in je op)
Noem het eerste wat te binnenschiet: iemand die iets van een bedrijf koopt met dit logo is: ...
Beschrijf (wat zie je) het logo eens (welke element(en) valt / vallen direct op?)
Welke elementen onderscheid je?
Wat betekenen deze denk je? (benoem dit per element)
Wat voor boodschap zou men willen communiceren?
Attitude: Wat vind je van het logo (waarom vind je dat, hoe belangrijk vind je dat?)
Welke waarden roept het logo op/ passen erbij? (kwaliteit, moderniteit, prettig)
Wat voor soort bedrijf past bij dit logo (branche / tastbaar / ontastbaar / modern / kwaliteit)
Wat voor producten / diensten heeft het bedrijf?
Attitude: Wat vind je van het bedrijf (waarom vind je dat, hoe belangrijk vind je dat?)
**Items experiment study 2**

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**Visual Acumen**

Het kunnen zien van subtelere verschillen tussen productdesigns is een vaardigheid die ik met de jaren heb ontwikkeld.

Ik zie dingen in de vormgeving van producten die andere mensen gewoonlijk over het hoofd zien.

Ik ben in staat om me een voorstelling te maken van hoe een bepaald product past bij de vormgeving van andere producten die ik in huis heb.

Ik weet redelijk goed wat maakt dat het ene product er beter uitziet dan andere, concurrerende producten.

---

**Logo Evaluation**

Ik vind de huisstijl (kleuren, lettertype, logo ed.) van Pijlvast trendgevoelig/trendy.

Ik vind de huisstijl (kleuren, lettertype, logo ed.) van Pijlvast onderscheidend.

---

**Explicit Iconic Knowledge**

<table>
<thead>
<tr>
<th>I1</th>
<th>Pijlvast richt zich op jonge gezinnen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I2</td>
<td>Klanten van Pijlvast zijn blije mensen.</td>
</tr>
<tr>
<td>I3</td>
<td>Pijlvast is gespecialiseerd in flats en/of appartementen.</td>
</tr>
<tr>
<td>I4</td>
<td>Pijlvast is gespecialiseerd in bedrijfspanden.</td>
</tr>
<tr>
<td>I5</td>
<td>Overdracht van huiseigendom.</td>
</tr>
<tr>
<td>I6</td>
<td>Afhandeling van contracten.</td>
</tr>
</tbody>
</table>

---

**Explicit Symbolic Knowledge**

<table>
<thead>
<tr>
<th>S1</th>
<th>Pijlvast is gespecialiseerd in woningen met een energielabel A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2</td>
<td>De medewerkers van Pijlvast zijn bekwamer door hun hoge intelligentie.</td>
</tr>
<tr>
<td>S3</td>
<td>Pijlvast heeft een website met zoekfunctie.</td>
</tr>
<tr>
<td>S4</td>
<td>Mate van trouw door medewerkers aan mij als koper/verkoper</td>
</tr>
<tr>
<td>S5</td>
<td>Afdwingen van geluk bij het vinden van een geschikte woning.</td>
</tr>
<tr>
<td>S6</td>
<td>Realiseren van tevreden klanten door hoge kwaliteit.</td>
</tr>
</tbody>
</table>
**Behavioural Intention**

Pijlvast wordt mijn partner in de aanschaf van mijn nieuwe huis of woning.

De kans is groot dat ik Pijlvast ga overwegen als ik een huis ga kopen.

Ik zal Pijlvast aanraden aan familie die van plan is een huis te gaan kopen.

Ik zal zeker een second opinion opvragen bij Pijlvast nadat ik bij mijn eigen aanbieder geweest ben.

Ik zal Pijlvast bezoeken om eerst een reële indruk op te doen van het bedrijf voordat ik het overweeg.

---

**Streetscape with iconic composite logo**