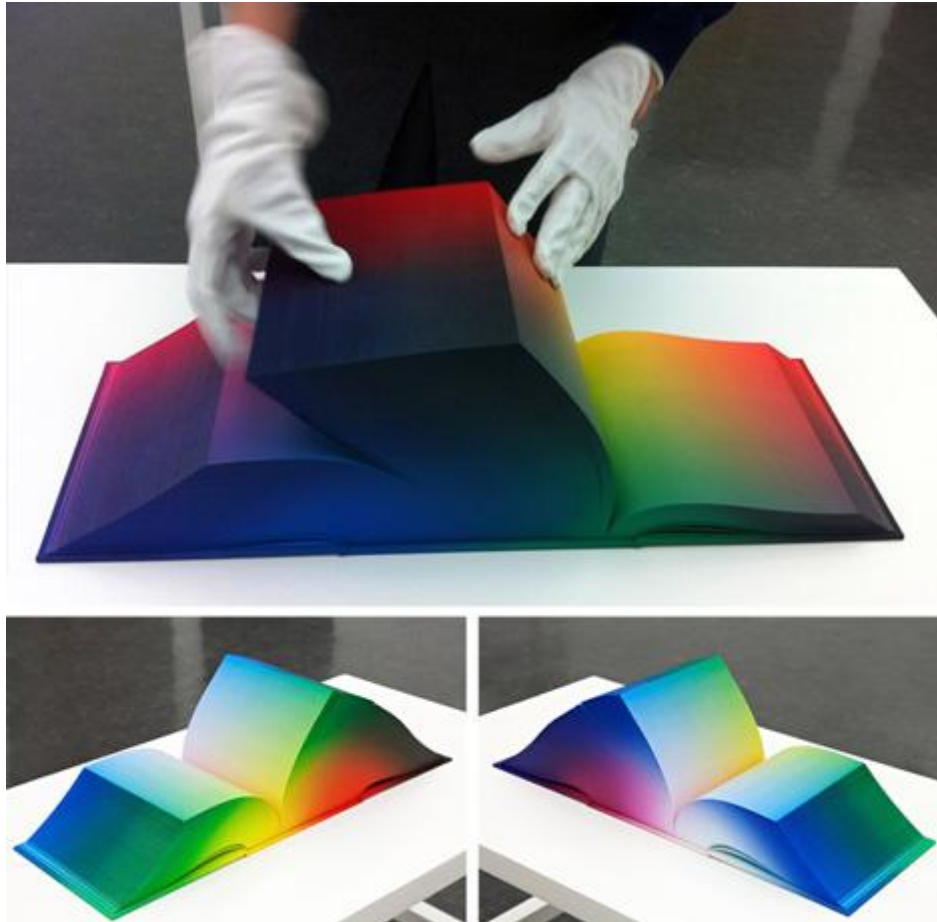


# The visualization of archetypes through the use of colors in logos

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## Summary

The logo is the most eye-catching element of a brand, as it is visible on buildings, clothing, products, packaging, letters, brochures, and commercials. Therefore, the identity of a brand should be embedded in its logo. The color is an important aspect of the corporate visual identity. This study examined to what extent a brand identity, in the form of an archetypical personality, can be visualized with colors in logos. Differences in hue, saturation and brightness were measured in the main study. An online questionnaire was used to measure the fit between logo colors and brand archetypes. The results of this study show that colors can be used in logos to visualize archetypes. Colors are a helpful tool to express an archetype of a brand. Directives for the use of colors in logos are presented for every archetype and clusters of archetypes are formed and discussed.

## Samenvatting

Het logo is het meest in het oog springende element van een merk, aangezien het zichtbaar is op gebouwen, kleding, producten, verpakkingen, brieven, brochures en in reclames. Daarom moet de identiteit van een merk worden ingebed in het logo. De kleur is een belangrijk aspect van de huisstijl. Deze studie heeft onderzocht in hoeverre een merkidentiteit, in de vorm van een archetypische persoonlijkheid, kan worden gevisualiseerd met kleuren in logo's. Verschillen in tint, verzadiging en helderheid werden in het hoofdonderzoek gemeten. Een online vragenlijst werd gebruikt om de fit tussen logokleuren en archetypen te meten. De resultaten van dit onderzoek tonen aan dat kleuren kunnen worden gebruikt in logo's om archetypen te visualiseren. Kleuren zijn een handig hulpmiddel om een archetype van een merk uit te drukken. Richtlijnen voor het gebruik van kleuren in logo's worden gepresenteerd voor elke archetype en clusters van archetypen worden gevormd en besproken.

## 1. Introduction

“The average Caucasian sees 377 advertisements a day”, is a headliner in the NRC Next. In addition, companies in the Netherlands invest €4.285.000.000,- a year on media (Niewold, et al., 2010). These are dazzling numbers. How is it possible, in this tsunami of Euros and commercials, to stand out with your brand?

Strong brands no longer differentiate on product characteristics, such as price and quality, alone. Consumers are being pushed by a company to build a relationship with a brand. Companies can do this, for example, by adding personality traits to a brand. Brand personality is defined as the set of human characteristics that are associated with a brand (Aaker, 1997, p. 347). In figure 1, Magnum uses one of the seven deadly sins to characterize their ice-cream. This is a personal characteristic transformed in a product of a company. The person on the couch, represents Bentley literally as a person. The brand can be seen as classy, but it does not care about the rest of the world.



Figure 1. Advertising posters of Magnum (left) and Bentley (right).

Brand personality is an interesting part of marketing and the last decades it is used numerously by companies to differentiate from others. A rather new part of brand personality are archetypes. Carl Gustav Jung (1938), the founding father of the archetypes, combined personalities with human characteristics. Archetypes are congenital, universal prototypes for ideas and may be used to interpret observations. Mark and Pearson (2001) reduced the archetypes to twelve, for the use of brand personalities. Since then, companies started to use the archetypes as a branding tool.

The logo is the most eye-catching element of a company, because it is visible on buildings, clothing, products, packaging, letters, brochures, and commercials. A logo consists of a word mark, a figurative, or a combination of these two (Henderson & Cote, 1998). The visibility of a logo makes it for an organization of vital importance to use a logo that fits the positioning strategy in every possible way. This study examines if the colors in logos can express an archetypal identity. Therefore, this study focuses on the following research question:

*“To what extent can archetypes be visualized with colors?”*

In the next chapter, the theoretical background behind this research question will be further clarified.

## 2. Theoretical framework

### 2.1 Brands

Brands are used for centuries to differentiate different kinds of products. The word 'brand' comes from the Norwegian word 'brandr', which means 'burn'. In former times, livestock traders branded their cattle to keep them apart (Keller, Apéria, & Georgson, 2008). The use of brands in marketing originates from the 19<sup>th</sup> century, i.e. the industrialization. However, after the second world war, branding became generally known and accepted. The introduction of the radio, television, and later the Internet, made it possible for companies to reach a large audience using different methods. Brands are the symbol of the transformation from the supply model to the demand model (Blackett, 2004). Companies are motivated to offer a high quality, a low price, and a good accessibility, because for every product, the consumer has numerous choices. Nowadays, this is a precondition and branding is the basis of success. Only since the 1990's marketing strategies are studied and used, whereby, for example, product design and point-of-purchase marketing are taken into consideration (Moor, 2007).

The last couple of decades, different definitions of a brands are formed. Lury (2004) gives a broad definition. She defines brands as open, changing concepts, that only exist in the minds of consumers. A more tangible description is that brands are shown through a design, name, symbol, or a combination of these three (O'Mally, 1991; Kotler, 1991). Thus, a brand is more than the product itself. Pearson (1996) suggests that a brand represents a promise to a customer. This promise states that the product or service the consumer is looking for, can be satisfied the best by that specific brand. A brand that uses this concept is McDonald's. McDonald's promises the consumer simple, but tasty and reliable food. That is why a lot of tourists go to a McDonald's instead of a local restaurant. They know what they can expect when going to the McDonald's. This promise represents the identity of McDonald's. McDonald's is competing with other companies by using its identity. This is called branding. Branding focuses primarily on the perception around a brand (Riezebos, 2002).

### 2.2 Brand equity

As described above, organizations are striving for differentiation. Besides differentiation, it is also important for an organization to give meaning to the brand (Kay, 2006). There are so many brands in the world, that differentiation based on price and quality alone, is not enough. There must be a meaning in the differentiation. A strong brand is a brand that is distinctive on more than one ground. This is called brand value, or brand equity. There is also a difference in the meaning that a company wants to give to a brand, and the meaning that a consumer gives to the same brand (Batey, 2008). If a brand succeeds in conveying the desired meaning and a strong brand is created, this will bring some significant advantages for that company.

In the first place, brand equity can influence the evaluation of specific products. Familiarity with the brand provides a more positive attitude towards the product (Hoeffler & Keller, 2003).

In the second place, strong brands make consumers more loyal. A company can exploit this by using brand extensions. An example of a company that uses brand extensions is Apple. The Ipod, Iphone, IMac, and the Ipad are recognizable because of the 'i' and they all have the Apple-logo on them. The products are also presented on the same way, with the same marketing strategy. If customers are satisfied with, for example, the Ipod, it is more likely that they also choose a product from Apple when they need, for instance, a phone (Smith, 1991; Smith & Whan Park, 1992). There are two conditions for using brand extensions. In the first place, the products should be of a similar quality

and in the second place, the products should be in the same product category (Dacin & Smith, 1994; Broniarczyk & Alba, 1994).

The third advantage of a strong brand is that it makes its customers less price sensitive (Kay, 2006). An example of a product that shows this advantage is water. Customers are willing to pay more for a bottle of Spa than for a bottle of an unknown brand, while the product characteristics are practically the same. Firth (1993) concluded that customers are willing to pay more for a strong brand than for an unknown brand. He studied accountancy bureaus and found that strong brand names increased the perceived quality of the company. Pope (1993) did a similar study and found that customers are willing to buy a computer brand with a low brand equity (Packard Bell) only when they receive a discount, if compared with brands with a high brand equity (IBM).

The fourth advantage of a strong brand is that commercials are better watched by consumers and negative expressions about the brand are less likely believed. This can cause less advertising costs and/or a better reach of the advertisements (Hoeffler & Keller, 2003).

The fifth advantage of a strong brand is that it sustains itself. Because it is a strong brand, the brand will have the best spots on the shelf. Because it has the best spots on the shelf, it will remain a strong brand (Hoeffler & Keller, 2003).

Davis (2002) states that having a strong brand can be as precious as having extra financial resources.

## 2.3 Positioning

To create a strong brand, it is important to take in a clear position. A couple of decades ago, companies focused mainly on the visual input that consumers received and what they picked up from advertisements. Old-fashioned positioning strategies focused mainly on price, quality, and service. Because of the increased competition and mass-media, it became more difficult to differentiate on these product characteristics alone. Ries and Trout (1986) were the first who studied the way the human brain saves and uses information to make (buying) decisions. Positioning is the position a brand takes in the mind of a customer, compared with other brands in the same product category. For a brand, positioning creates a unique, credible, sustainable, and valued position in the head of the customer (Segupta, 2005, p. 17). Ries and Trout (1986) stated that information is stored in different categories. They called this the categorization theory. Categories are networks of associations (Maathuis, 2003). For a company, the goal of positioning is to create value for the stakeholders. To fulfill this goal, the internal and external environment should be analyzed. After that, the added value should be communicated with the stakeholders (Van Bekkum, 2005).

The positioning of a company is influenced by consumer behavior. The three dimensions of consumer behavior are: cognition, affection, and conation. Cognition is the positioning based on rational arguments. Affection is positioning based on sentimental arguments, such as sympathy. Conation is positioning based on behavior intention (Hilgard, 1980). Cost and McCrae (1998) described the personality of a human as the tendency to show consistency in cognition, affective perception, and behavior.

## 2.4 Brand personality

To position themselves, companies develop a positioning strategy. Personality is what makes people different. By applying this concept to organizations, they have more possibilities to differentiate than by differentiating on price, quality, and service alone. A positioning strategy that uses brand personality adds human traits to a brand. Brand personality can be defined as the set of human characteristics that are associated with a brand (Aaker, 1997, p. 347). Adding personality to a brand has several advantages.

In the first place, product characteristics are more difficult to differentiate than personality characteristics. Brand personality can differentiate on more levels than just price and quality (Biel, 1992). Second, personality characteristics can develop in time, while staying timeless (Aaker, 1997). Third, a brand personality is convenient for brands that operate in different markets. Nike, for example, sells different types of clothing, but their brand personality is the same in every category. The fourth benefit that companies can have from using brand personalities is the stronger connection between the customer and the brand (Aaker, 1997; Biel, 1992). Studies show that consumers have the tendency to identify themselves with brands (Aaker, 1999; Aaker & Biel, 1993; Kotler, 2003; Plummer, 2000; Siguaw, Matilla & Austin, 1999). In this way, a company can generate trust, which leads to a higher value of, and greater customer loyalty towards, the brand (Aaker, 1997).

The model of Aaker (1997) connects personality characteristics with brands. She uses the so-called big five dimensions: sincerity, excitement, competence, sophistication, and ruggedness. Added features, such as happy (excitement) or successful (competence) give a broader view of the different dimensions. The big five model is used by marketing managers to shape and design a brand. Swatch is an example of a brand that uses brand personality to position their brand. Swatch wants to be a trendy brand. That is why they focus on the dimension excitement. By making fresh commercials and using trendy words, they try to get a place in the minds of the youthful market.

## 2.5 Brand archetypes

The use of archetypes is a comprehensive way to put the brand personalities in a framework. Plato is the founder of archetypes, which he then called the theory of forms. Carl Gustav Jung developed this theory and argued that archetypes are unconscious patterns of ideas that live in the mind of everyone, the collective unconscious. These patterns of ideas are embedded in humans so they can react in situations that need a quick response, such as danger or birth. The collective unconscious contains experiences and information about human ideas and concepts. These patterns are meaningful, that is why they evoke such strong reactions (Mark & Pearson, 2001). An example of this is the maternal instinct that is triggered by seeing a baby (Jansen, 2006). Jung (1938) defines archetypes as the forms or images of a collective nature which occur practically all over the earth, as constituents of myths and at the same time as individual products of unconscious origin.

According to Jung, the patterns of ideas are the same in every culture. Also, the number of archetypes is infinite. Mark and Pearson (2001) were the first who applied the idea of archetypes to brands. They reduced the infinite number of archetypes to a more manageable twelve. By attaching an archetype to a brand, reactions can be provoked. Especially because humans are naturally (and unconsciously) familiar with the archetypes. Harley-Davidson is an example of a brand that uses an archetype to trigger specific feeling in customers. One does not buy a Harley-Davidson because it uses better materials than competitors, but because it makes the buyer feel rebellious. The archetype that Harley-Davidson uses is the Outlaw.



The use of an archetype has several advantages for a company. However Mark and Pearson (2001) only describe twelve archetypes (figure 2), there is enough space for numerous different sub archetypes, all with their own values. This also makes the archetypes unambiguous. Because archetypes are hidden in every human, archetypes are universal and applicable to everyone. Thus, for an identity based on archetypes it is not necessary to adapt it to every country or culture. By using the archetype as the spine of the organization, the brand stays timeless, but still can be refreshed over time. Finally, archetypes are a source of inspiration. Within one archetype, there can be different kinds of brands that develop their own identity. For example, Harley-Davidson, Linux, and Mini all share the archetype Outlaw, but are unique in their own way (Jansen, 2006).

Mark and Pearson (2001) mentioned twelve archetypes, but this does not mean that they are all equally different. Some archetypes show similarities. By adding two axes to the archetype framework, mastery versus stability and independence versus belonging, four clusters of three archetypes each are formed. On one hand, humans feel the need to be alone and independent. On the other hand, they also have moments when they want to help others and be social. The same is true for mastery and stability. Mastery represents the archetypes Caregiver, Ruler, and Creator. This distribution has never been scientifically proven. Other authors classified the archetypes in different ways. Jansen (2006) called the axes freedom and order, and ego and social. Bolhuis (2011) combines the quadrants ego and freedom from Jansen (2006) and calls it freedom. The other clusters are order and social. Van Nistelrooij (2013) found another variation. He found three clusters: expressive, social, and competence. Oosterhout (2013) also found three clusters and calls them social, freedom and order. The clusters have the same names as Bolhuis (2011), but with different archetypes in each cluster. Faber and Mayer (2009) found five different clusters: the knower, carer, striver, conflicter, and everyperson. They also added the archetype shadow. Although the classifications can differ, the twelve archetypes stay the same.



Figure 2. The 12 archetypes (Pearson C. , 1991).

The twelve archetypes of Mark en Pearson (2001) are called: Innocent, Everyman, Caregiver, Lover, Jester, Outlaw, Explorer, Creator, Hero, Magician, Sage en Ruler. The descriptions of every archetype can be found in table 1.

Table 1

*Definitions of the archetypes (Mark & Pearson, 2001).*

	Description
Creator:	This brand helps people to try new things in a creative way. The products of this brand are original and innovative. For the creation of their products and advertisements, the brand uses the power of imagination.
Caregiver:	This brand is caring, compassionate, and generous for their customers and society in general. The products of this brand help people in their daily activities. The brand is against greed and selfishness. It also contributes to a harmonious society in which everybody is helpful for each other.
Ruler:	This brand shows leadership and takes its responsibility. Products of this brand give control, order, and structure. Due to this properties, the brand is not only successful, but also the leader in its domain.
Jester:	This brand entertains people in a clownish and funny way. The products of this brand ensure that people enjoy the world, as children enjoy a playground. This brand places everything in perspective by using humor. Only the fun and happy side stay visible.
Regular Guy:	This brand is accessible for everyone, because it represents the normal guy or woman. Products of this friendly brand are not distinctive or striking. 'If you act normal, you act crazy enough', could be the motto of this brand. The brand is realistic, wise, and accessible.
Lover:	This brand has a loving relationship with its environment. Products of this brand are passionate and seductive. The products and the customers are made tempting in every possible way. This brand is all about beauty, temptation, and contact with the environment.
Hero:	This brand gives customers courage, power, and self-esteem. This brand helps people to make them competent and powerful. The brand is ambitious, focused, and powerful. The brand is also combative and does not avoid challenges. The brand uses its power to improve the world.
Outlaw:	This rebellious brand changes existing situations and is not led by the usual social conventions. The products of this brand function as an interruption of the daily order. The brand is rebellious and does not consider it important to belong to or get approval from others.
Magician:	This brand helps people to create changes in their lives. The brand contributes to the achievement of dreams, by transforming undesired situations to the enchanting ultimate goal. To reach this goal, the brand often uses rituals, what makes it mysterious.
Innocent:	This brand gives people a happy and positive approach to life. The products of this innocent benign brand provide optimism and happiness. The brand is sincere, trusting,

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	and wants to do good for everyone. The brand is based on the good in people and wants to reward this.
Explorer:	This brand helps people to achieve freedom and independence. The brand is continuously searching for new adventures and products. The products are made to help people enjoy life. The products of this brand give people the possibility to explore what they can be or what they can achieve.
Sage:	This brand uses intelligence and analysis to understand the world and to develop themselves. The brand is continuously gathering information and knowledge to increase their experience and expertise. Customers can learn from this brand. The brand has a strong self-reflection and is appreciated because of it.

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## 2.6 Corporate Visual Identity (CVI)

Brands can communicate their personality through behavior, communication, and symbolism. Communication is all the verbal and visual characteristics within an organization that is expressed to all the stakeholders. In this context, behavior is the attitude of employees, based on expertise or rules of conduct. Symbolism is all visual expressions of a company that stakeholders can come across with. Examples of these visual expressions are: logos, illustrations, offices, and corporate clothing (Birkigt & Stadler, 1986).

The symbolism of an organization is the easiest and cheapest part to change for an organization. The CVI is the dominant representative of symbolism (Birkigt & Stadler, 1986). The CVI can differentiate one company from another. The CVI consists of a logo, typography, the use of colors, the layout, pictures, illustrations, and signs (Van den Bosch et al., 2005). To create a consistent image of a company, it is important that the CVI is also visible on the buildings, the interior, and the car fleet. The CVI has three main advantages. It provides differentiation (Melewar & Akel, 2005), makes the brand recognizable (Kohli & Suri, 2002), and creates a positive attitude towards the brand (Walsh, 2005).

The logo is the most eye-catching element of a company, because it is visible on buildings, clothing, products, packaging, letters, brochures, and commercials. A logo consists of a word mark, a figurative, or a combination of these two (Henderson & Cote, 1998). The logo can contain fonts, colors, and/or symbols (Sharma & Garikaparathi, 2013). Sharma en Garikaparathi (2013) state that the logo represents the image and the brand promise of an organization.

A logo can bring a competitors advantage and can improve the corporate reputation (Baker and Balmer, 1997; Olins, 1989). Logos last longer in the memory of a customer than words. This is an advantage, because most of the time, logos are only briefly visible. But more important, a logo can communicate the characteristics and the identity of an organization (Aaker, 1997; Ajala, 1991; Batra, Lehman & Singh, 1993; Blijlevens, Creusen & Schoormans, 2009; Bromley, 2001; Shimp, 2003; Van Riel, Van den Ban & Heijmans, 2001; Zhang, Feick, & Price 2006). A logo can complement the name of a company. Even a logo without the name of the company can be enough to recognize it. By seeing a large M on the side of the road, a lot of people know that there is a McDonald's nearby (figure 3). An important characteristic of the M of McDonald's, is the yellow color. A color can be a very recognizable element for a company.



Figure 3. The logos of Nike, McDonald's and Apple.

## 2.7 Color

As Sharma and Garikaparthi (2013) described, a logo consists of fonts, colors, and/or symbols. The logo of McDonald's is recognizable because of the shape (the two arches), but also because of the color. Rabhubir (2010) provides a model that clearly describes how visual processing works. The model states that there are various visual properties that can influence the judgment of consumers. One of these properties is color. A color can influence a brand identity in such a way, that it increases the brand recognition and the desired image (Bottomley & Doyle, 2006). A color consists of three dimensions: hue, brightness, and saturation. Hue is the pigment. The three primary hues, from which all colors are made are red, yellow, and blue. A color is bright in a scale from white to black. Saturation refers to the depth in a color (Valdez & Mehrabian, 1994).

Gorn et al. (1997) studied the knowledge of marketing managers in theories about the use of colors. They found that most marketing managers are not familiar with most of the theories and use their gut feeling instead. Bellizzi and Hite (1992) studied the influence of the colors red and blue on the buying behavior of consumers in the retail environment. They argue that blue resulted in more purchases, less purchase delays, and a stronger tendency to go shopping. People are influenced binominal. By arousal, which shows a higher brain and heart activity, and by evaluative reactions, which cause a different attitude towards a brand.

### 2.7.1 Color associations

Associative learning is the process whereby two stimuli are connected. The combination of colors and feelings can realize the same effect for people. The color yellow, for example, is associated with a happy feeling (Collier, 1996). Hue, saturation, and brightness determine the way a color looks, but color aspects determine the way a color feels. There are different color aspects. Bright colors are determined by the amount of pure color. Bright colors are vivid and attract attention. Dark colors are hues that contain black in their composition. They close up space. Dark colors are concentrated and serious. Light colors are the palest pastels. They take their lightness from an absence of visible colors. Light colors are open and suggest airiness. Warm colors are hues that contain red, orange, or yellow. They are warm, welcoming and spontaneous. Cold colors are hues that contain purple, blue or green and are calming and refreshing (Sutton & Whelan, 2004).

Associative learning is a process that is nestled in the beginning of the decision making process. Associative learning makes it possible to make quick decisions and to react fast in different kinds of situations (Schlack & Albright, 2007). By noticing a certain color in a logo, people can be persuaded to buy a product, only because of the associations the person has with it. The influence of a color is subject to change. The last couple of years, the color green is used a lot by environmentally friendly organizations (Greenpeace). These associations are often unconscious, as well as the subsequent behavior. Thus, the color choice of a logo can, (un)consciously, influence the behavior of people, including buying behavior (Mehta & Zhu, 2009).

The use of colors is a widely studied area in the world of branding. A color should fit to a company's identity. Keller (1993) states that the cohesion between brand associations creates a stronger and more positive brand. Bottomley and Doyle (2006) have applied this to the use of logos. They argue that there is a connection between the use of colors and the logo.

Jacobs et al. (1991) studied the associations that colors evoke. Participants of the study associated black with expensive and powerful (Nike), blue with trust, purple with progressive and elegant (Yahoo), and gray with luxury (Swarovski). Colors also evoke different emotions in different countries. In the United States, blue is the most used color in logos, while red is the most used in Asia (Schmitt & Pan, 1994). In Asia, white is associated with death, while it stands for purity in the Anglo-Saxon world. Blue, which is the most popular American corporate color, is perceived as cold and evil in East Asia, coldness in Sweden, death in Iran and purity in India. In addition, red means unlucky in Chad, Nigeria and Germany, but lucky in China, Denmark and Argentina (Aslam, 2006). Wallace et al. (2006) state that minimizing the number of colors in a logo can reduce the ambiguity of the corporate visual identity. A well chosen color can increase the brand equity (Bottomley & Doyle, 2006). Studies show that generally, red stands for active, warm, and lively. Brown and black stand for old/antique and blue, green, and white stand for peaceful, calming, and soft. However, these color associations do not say everything about the use of colors in logos (Madden, Hewett, & Roth, 2000).

### 2.7.2 Colors and archetypes

Berlin and Kay (1969) established the universal color spectrum. This spectrum contains the colors black, white, red, green, yellow, blue, brown, purple, pink, orange, and gray. These basic colors cover the complete color palette. Johnson (2007), Frank and Gilovich (1988), and Sabanovich (2008) studied which characteristics colors have, when used in a logo. These color characteristics show similarities with the characteristics of the different archetypes. In table 2, the characteristics of the colors are discussed, and if possible, linked to archetypes or a cluster of archetypes (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008).

Table 2

*Colors, color characteristics and the relation with archetypes.*

Color	Characteristics	Explanation
Gray	Solid; modest; intelligent; conservative; old-fashioned; boring; elegant	Gray is a color that provokes little reactions. It is quite boring. It could be used in the order cluster.
White	Peace - purity - bright - enlightened - sterility - hope	Because white is the reflection of all colors and stands for peace and purity, the link with the Innocent archetype is easily made.
Black	Powerful - authority - elegance - stylish - bravery - mysterious - rebellious	The characteristics of the color black have a lot of similarities with the cluster stability (Mark & Pearson, 2001). Powerful, authority and rebellious are corresponding characteristics. Because of its characteristics powerful and authority, it also has a link with the archetype Ruler.
Red	Emotional- aggression-passion- love -power-vitality-	Red is full of passion and love. It stands also for activity and a higher heartbeat. Because of the emotional and loving factor, the color red could be in the social (Jansen, 2006) or belonging (Mark

	drawing attention- revolution	& Pearson, 2001) cluster. The best fitting archetype should be the lover.
Blue	Authority - dignity - security - trust - loyalty - conservative - wisdom	The characteristics of the color blue fit the cluster order (Jansen, 2006). The archetypes in that cluster share the characteristics loyalty and trust. This could also fit the archetype Everyman that is very close to the cluster order.
Green	Calming - healthy - natural - refreshing - environment - inexperience	Green stands for nature. The archetype explorer could be the best fit, because it stands for adventure, nature, and the environment. The cluster freedom (Jansen, 2006) could be the best fit here.
Yellow	Cheerful - optimistic - cheerfulness - pleasure - friendship	The cheerfulness and friendship characteristics of the color yellow are leaning towards the cluster social, while optimism and pleasure lean towards freedom. The Jester is right between these clusters and could be a good representation for this color.
Purple	Elegance - luxury - authority - spirituality - mysterious - flamboyant	The Hero and the Magician are both in the clusters ego and stability. These clusters stand for authority, elegance, and luxury. The spiritual and mysterious character of purple also fits the archetype Magician very well.
Orange	Openness - kindness - cheerful - enthusiasm - energy - modern - playful	The Jester wants to lighten up the world and is fun and humorous. Orange represents a lot of these features. The cluster freedom probably fits this color the best.
Brown	Simple - natural - earthy - characteristic - calming - stability	Because of the natural and earthy associations, the Explorer is the only archetype that has some common ground with this color.
Pink	Femininity - softness - innocent - calming - love - sympathetic	Pink is has some similarities with red, but is more feminine. The social cluster could be the best fit for this color. Because of the softness and loving character, the archetypes Caregiver and Lover could be the best fit.

Previous studies found that colors in logos can have different associations (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008). These associations show similarities with the archetypical characteristics. This study is set up to find out if archetypes can be visualized with colors with the following research question:

*“To what extent can archetypes be visualized with colors?”*

### 3. Method

To answer the research question, the first step was to conduct a preliminary test. The preliminary test is important to select the colors for the main study. The characteristics that are associated with the colors are used in the discussion to link the colors to the archetypes. The main study is set up to answer the research question.

#### 3.1 Preliminary study

To determine the final colors and the corresponding characteristics, a preliminary study was necessary.

##### 3.1.1 Respondents

Eight respondents participated in this study. The respondents were selected at random. The average age was  $M=34.5$  with a standard deviation of  $SD=14.15$ . The youngest was 22 and the oldest was 54. Among the respondents were four men and four women.

##### 3.1.2 Measuring instruments

In this preliminary study the so-called photosort method was used. The photosort method is a non-verbal method to measure affection and emotional factors. Individuals have to associate, in this case, colors and characteristics. Respondents are asked to divide the colors in homogenous groups. Usually respondents have to make two groups and divide these groups in subgroups until no more subgroups can be made. In this case, respondents are free to make the groups as big as they want.

As stated before, there are eleven hues in the universal spectrum of colors. To determine which colors should be used in the main study, all hues are printed in three different types of brightness (low, medium, high), and three types of saturation (low, medium, high). The stimuli are created with Adobe® Illustrator® CS6 to alter the hue and saturation and brightness levels of the logo. Appropriate levels for saturation (high=100%, low=42%) and brightness (high=100%, low=58%) match the levels used in previous work in this area (Gorn et al. 2004). To determine the best colors for the study, an extra brightness and saturation level is added. The saturation level between 42% and 100% is 71%. The brightness level between 58% and 100% is 79%.

Eleven different hues times three levels of brightness and three levels of saturation means that there are ninety-nine different colors. However, white is a color with full brightness, black is a color with zero brightness, middle gray has a medium level of brightness, and brown has the same hue as orange, but only with high saturation and a brightness level of 29%. Thus, black, white, gray, and brown are only printed in one variant. The remaining seven hues are printed in nine variants (three levels of brightness times three levels of saturation). This makes a total of sixty-seven cards. These exceptions enable us to cover the spectrum of Berlin and Kay's (1969) eleven universal colors. The used HSB-levels (Hue-Saturation-Brightness) are shown in table 3. The colors used on the cards can be found in appendix A.

Table 3

*Hue, brightness, and saturation levels per color used in the preliminary study.*

Color	Hue (0-360)	Levels of brightness (0-100)	Levels of saturation (0-100)
Gray	0	0%	50%
White	0	0%	100%
Black	0	0%	0%
Red	0	58% - 79% - 100%	42% - 71% - 100%
Blue	240	58% - 79% - 100%	42% - 71% - 100%
Green	120	58% - 79% - 100%	42% - 71% - 100%
Yellow	60	58% - 79% - 100%	42% - 71% - 100%
Purple	300	58% - 79% - 100%	42% - 71% - 100%
Orange	30	58% - 79% - 100%	42% - 71% - 100%
Brown	30	100%	29%
Pink	350	58% - 79% - 100%	42% - 71% - 100%

### 3.1.3 Procedure

The selected respondents were first presented a photo to test colorblindness. After that, the respondents were asked to sort the cards in different groups, based on external characteristics. There were no boundaries to the sizes of the different clusters. The colors that, according to the respondents, did not fit to a group could be left separately. In the end, the respondent had to give names to the different clusters.

After the first part of the study, the respondents were given fifty-eight color characteristics that they had to address to the different clusters, such as cheerful, passion, flamboyant or authority. The characteristics used in this study are based on the characteristics of Johnson (2007), Frank and Gilovich (1988), and Sabanovich (2008). The form used in the preliminary study can be found in appendix B.

### 3.1.4 Results

It was remarkable to see that most respondents selected the groups based on the different hues. Most of the times, the groups were also named after the color, for example, blue, green or red. All colors from the universal spectrum of colors of Berlin and Kay (1969) were named at least by 6 of 8 respondents. Table 4 shows the names that were chosen for the separate groups the most.

Table 4

*The most chosen cluster names.*

Cluster name	Frequency	Other names
Blauw	8	Marineblauw, Lucht, Zee
Groen	8	Leger, Natuurlijk, Boskleur
Rest	8	Saai, Restant, Overig
Rood	8	Felrood
Paars	7	Lila, Magenta
Geel	7	
Bruin	7	Herfstkleuren, Donker
Oranje	6	



Roze	6	Pink, Babyroze
Donkerbruin	1	
Geelgroen	1	
Groenbruin	1	

As the table shows, black, gray, and white were placed in one group by 8 of 8 respondents (rest). Because these colors were in one group, white, black, and gray are all part of the main study. Not because of their similarities, but because of their misfit with other colors.

All colors in the spectrum were recognized, but the selection of the right color to a cluster name was more problematic. For example, some pink colors were grouped in the 'red' cluster and the other way around. In table 5 the most used cluster names are compared with the hues that were put in that cluster.

Table 5

*Cluster names against hues.*

Hue	Blue	Green	Red	Purple	Yellow	Brown	Orange	Pink	Rest
Blue	100%								
Green		82%			18%				
Red			46%	13%				41%	
Purple			8%	75%				17%	
Yellow		8%	2%		71%		19%		
Brown		4%	28%	2%		6%	43%	17%	
Orange					7%		93%		
Pink			31%	24%			2%	43%	
Rest						15%			85%

Only 46% of the colors that were put in the 'red' cluster had a red hue, against 41% with a pink hue. Conversely, only 43% of the pink hues were put in the pink cluster against 31% red hues en 24% purple hues. This can be explained by the structure of the hue ranges. Figure 4 shows that red and pink are small parts on the hue ranges map and close to each other. By altering the saturation and brightness levels of two hues that are very close to each other, confusion by respondents can occur. A darker version of pink can easily be confused with red. A similar explanation applies to brown. Only 6% of all hues put in the brown cluster were actually brown. However, brown has the same hue as orange. An orange hue with a low level of brightness looks like brown.

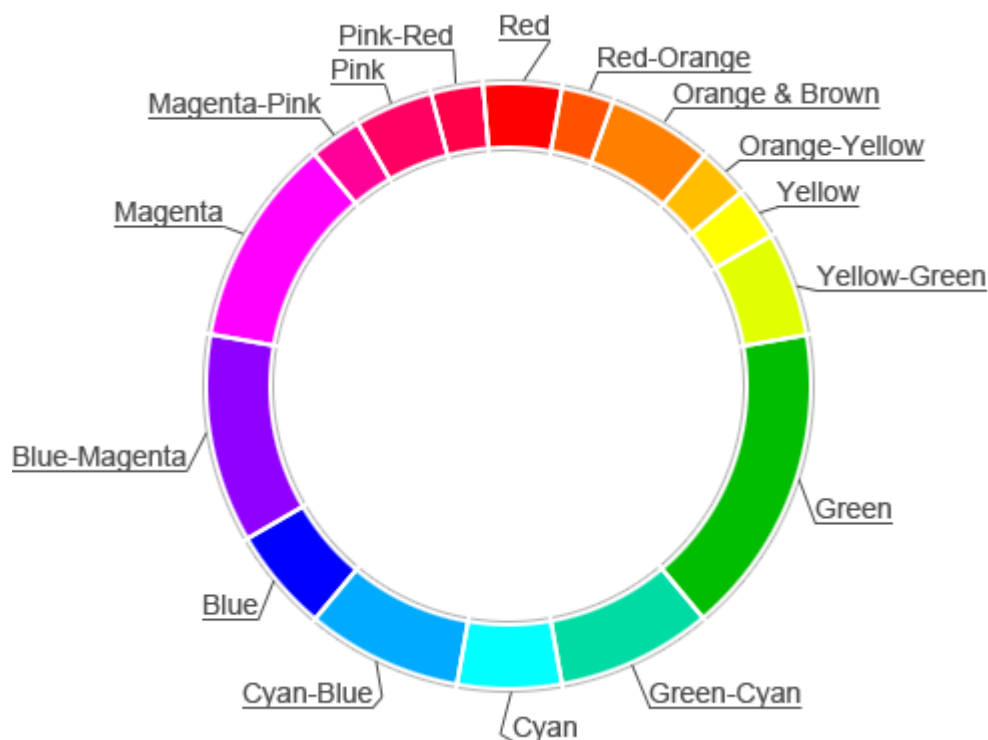


Figure 4. Hue ranges map.

### 3.1.5 Conclusion




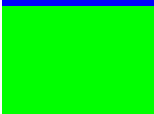











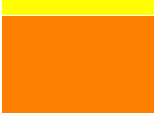
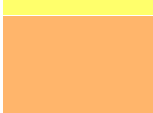

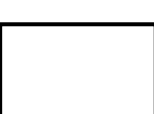


The preliminary study showed that respondents selected the colors in most of the cases on basis of the hue of a color. This could explain why a color with a red hue was grouped in a pink cluster. Because of its high brightness, the color red looks very light and pinkish. This could mean that a red hue evokes different emotions when its brightness and saturation are altered, because the hue red is put in different cluster names with different color characteristics. This can even be true for the hue blue. While they are all put in the same cluster, there can still be differences in color characteristics for colors with a higher/lower saturation or higher/lower brightness.

Therefore three different variants are selected for every hue for the main study (high saturation/high brightness, high saturation/low brightness and low saturation/high brightness). This does not apply for the colors black, white, and gray, because these colors only have one saturation and brightness level. There is also made an exception for the red hue with a high saturation and a low brightness. Six of the eight respondents grouped this color in the cluster 'brown'. This color is replaced by a red hue with high saturation and medium brightness. All eight respondents placed this color in the cluster 'red'. The same applies to the yellow hue with high saturation and low brightness. This color is replaced with a yellow hue with high saturation and medium brightness.

The color pink is not included in the study, because a lighter version of red already looks pinkish. The color brown is also not included in this study, because brown has the same hue level as orange. However, in table 6 brown is in a different row. This is because of the specific characteristics respondents associated with the color. This makes a total of 21 colors.

Table 6

*Selected colors and mentioned color characteristics for the main study.*

Hue	High Saturation High Brightness Bright	Low Saturation High Brightness Light	High Saturation Low Brightness Dark	Color Characteristic	Frequency
Blue				Loyalty Trust Authority	5 5 4
Green				Environment Healthy Natural	8 7 5
Red				Aggression Love Passion	6 6 6
Purple				Flamboyant Mysterious Luxurious	6 5 4
Yellow				Kindness Pleasure Cheerful	4 4 3
Orange				Enthusiasm Openness Playful	2 2 2
Brown				Earthly Simple Stability	7 5 4
White				Sterility Enlightened Pure	6 4 4
Gray				Elegant Conservative Old-fashioned	3 2 2
Black				Authority Powerful Stylish	3 3 3

## 3.2 Main study

The goal of the main study was to determine to what extent archetypes can be visualized with colors. An online questionnaire was used to collect the data. The respondents were asked through social media to fill in the survey. This gives respondents the opportunity to answer the questions whenever and wherever they want.

### 3.2.1 Measuring instrument

The questionnaire started with some demographic questions. A question to test colorblindness was added to indicate colorblind respondents. Then the actual questionnaire started.

#### 3.2.1.1 Independent variables

This study investigates different color characteristics. The preliminary study showed that the respondents based the clustering mainly on the hue of a color. Also, differences were found between colors with different levels of brightness and saturation. Therefore, the colors in this study are based on its hue first. Blue, green, red, purple, yellow and orange were selected from the preliminary study. For every hue, three variants are selected. A high saturation level (100%) with a high brightness level (100%) makes a bright color. A low saturation level (42%) with a high brightness level makes a light color. A high saturation level with a low brightness (58%) level makes a dark color. Also, black, gray, and white are added to the study. This makes a total of twenty-one colors used in the main study (see table 6). Thus, the color characteristics that are measured are the hue, the level of saturation and the level of brightness.

However, there are more characteristics that are taken into account. The influence of the three primary hues red, yellow, and blue is also measured by the extent of a primary hue in a color. Red, for example, has a full extent of red in its color, while orange (between yellow and red) has a medium extent of red in its color. Beside these color characteristics, there are color aspects that focus on the lightness, darkness, and brightness of a color, as well as the temperature (warm and cold colors) (Sutton & Whelan, 2004). Bright colors are defined by the amount of pure color within a hue. The clarity of bright colors is achieved by its omission of black and gray and are vivid and attracting attention. Light colors take their lightness from an absence of visible color in their composition and are almost transparent. Light colors open up the surroundings and suggest airiness. Dark colors are hues that contain black in their composition. They close up space and make it seem smaller. Dark colors are serious. Red, yellow, and orange are associated with warmth. Warm colors are comforting, spontaneous, and welcoming. Blue, green, and purple are associated with cold. Cold colors are strong, dominating, and calming. By measuring these color characteristics, more than recommendations about a hue on its own can be made.

The colors are presented in logos. This study used three neutral logo shapes to test if color was the only factor that influenced the choice of the respondents. These logo shapes were tested before in a color study by Labrecque and Milne (2011). The three logo shapes were applied to all twenty-one colors. This makes a total of (21 x 3 =) sixty-three logos.

#### 3.2.1.2 Dependent variables

In this questionnaire, descriptions of archetypes were given, followed by sets of logos. After each description of an archetype, the respondent was asked to rate the fit between the description and a set of logos on a seven point Likert scale. The descriptions of the archetypes were made by Van Nistelrooij (2013), who studied archetypes and logo shapes. The descriptions of the archetypes are shown in table 1 (paragraph 2.5).

### 3.2.1.3 Research design

Each respondent was given a description of all twelve archetypes. To reduce boredom effects, each respondent had to evaluate seven of the sixty-three logos. To get evaluations of all sixty-three logos, logo sets were made.

The preliminary study showed that the respondents based the clustering mainly on the hue of a color. Every logo set contained one variant of all six hues, complemented with a black, white, or gray logo. This makes a total of nine different logo sets with seven logos in each set. To reduce order effects, variations in the logo shapes were applied in every logo set. Also, every logo set contained a variation of light, bright, and dark logos. The logo sets can be found in Appendix C. Finally, the sequence of the archetypes was reversed for all nine variations of the questionnaire. This makes a total of eighteen variations of the survey. Each fit between a color and an archetype is evaluated by at least thirty-eight and up to eighty-nine respondents (Appendix D).

### 3.2.2 Data analysis

The data from the survey were used in different data sets. The first data set showed the data of every single respondent in the rows. The columns showed the results for all sixty-three different logos per archetype. This data set was used to remove errors. For example, respondents who filled in the same answer to every question, colorblind people, or respondents who quit the questionnaire before rating the fit between at least one archetype and one logo set.

In the second data set, the results from the first data set were transformed. The rows contained the (21 x 3) logos and the columns contained the mean scores on the fit with each archetype. This data set was set up to see if the color shape influenced the results.

The third data set combined the sixty-three logos to the twenty-one colors. The twenty-one colors were placed in the rows. The columns contained the mean scores on the archetypes and the independent variables: hue, brightness, saturation, dark, light, bright, temperature (warm/cold), extent of blue/red/yellow. This data set was used to find relations between archetypes and the use of colors in logos.

### 3.2.3 Respondents

The online survey was spread through Facebook and LinkedIn, so the reach of the questionnaire is unknown. A number of 313 respondents started the questionnaire. After removing colorblind respondents and questionnaires with no answers to any of the questions about archetypes (for example, respondents who quit the questionnaire after the demographics, or respondents who had the same answer to every question), 229 questionnaires were taken into account. Incomplete questionnaires were taken into account as well to achieve a higher number of evaluations per fit between an archetype and logos. The 229 questionnaires were filled in by 125 female (54.6%) and 104 male (45.4%) respondents. The respondents had an average age of 35.75 (SD=14.04, Min=16, Max=67). The majority of the respondents were (under-) graduates of university degree (34.9%) or higher professional education (39.3%), the rest (25.8%) had a lower educational level. In the next chapter, the results of the analyses are presented.

## 4. Results

In this chapter, the results of the main study are presented. Information about logo selection is followed by findings about the archetype framework. The chapter concludes with the results of the correlations between the archetypes and the logos.

### 4.1 Logo selection

In the survey, three different logo shapes were used. To find out if the different logo shapes had no significant influence on the results, a one-way ANOVA was performed. It was found that the diamond shaped logo and the triangular shaped logo had no significant influence on the results. However, the hexagonal logo influenced the results significantly for the creator archetype ( $p = .018$ ) and the regular guy archetype ( $p = .016$ ). In appendix E, all results are presented.

### 4.2 Archetype framework

To analyze the archetypical framework in general, a mean score was calculated for every combination of archetypes and colors. These scores were used as variables to perform a rotated varimax factor analysis (Table 8).

The matrix distinguished three components, or clusters. The first cluster is formed by the archetypes ruler, hero, outlaw and sage. The second cluster holds the archetypes explorer, creator, jester, and innocent. The third cluster consists of the archetypes magician and lover. The caregiver archetype does not fit in a cluster. It has a small fit with the second cluster, but this fit is not striking. The regular guy archetype does not have a positive fit with any cluster at all.

Table 8

*Results of the rotated varimax factor analysis*

Factor	1	2	3
Ruler	<b>,917</b>	-,050	-,263
Hero	<b>,902</b>	,292	-,218
Outlaw	<b>,787</b>	,194	,341
Sage	<b>,678</b>	,088	-,404
Explorer	,175	<b>,904</b>	,000
Creator	,121	<b>,843</b>	,269
Jester	-,053	<b>,813</b>	,396
Innocent	-,619	<b>,742</b>	,043
Lover	-,250	,081	<b>,747</b>
Magician	-,126	,112	<b>,692</b>
Caregiver	-,809	,395	,133
Regular guy	-,033	-,347	-,631

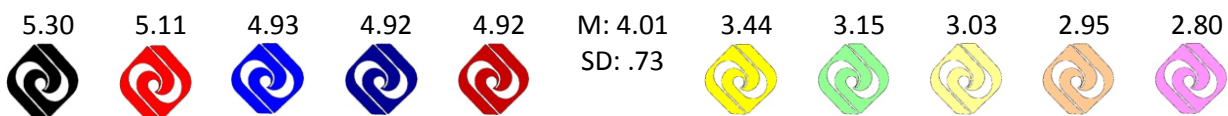
### 4.3 Archetypes and logos

This section presents the results per archetype. The mean scores per archetype of the different hues (blue, green, purple, yellow, orange, red, black, white, gray) were calculated, because the preliminary study showed that the hue was an important factor to allocate the colors to the different clusters. To investigate the relation between archetypes and the different hues, a correlation analysis was performed. The characteristics saturation, brightness, light, bright, dark, temperature (warm/cold), extent of red, extent of yellow, and extent of blue are also included in the correlation analysis. The results are presented<sup>1</sup> for each individual archetype. First the significant correlations for each color characteristic are presented, followed by the best and worst fitting colors for a logo, based on the mean scores. In appendix F, all correlations are presented, including the correlations which are not significant.

#### Ruler

The correlation analysis showed a significant negative correlation for the ruler archetype with the characteristics brightness ( $r=-.476^{**}$ ), light ( $r=-.580^{***}$ ), and the extent of yellow in a logo ( $r=-.537^{**}$ ). The correlation analysis showed a significant positive relation for the ruler archetype with the characteristic dark ( $r=.436^{**}$ ). Although hues are not significantly correlated to the ruler archetype, blue ( $r=.402^*$ ), red ( $r=.391^*$ ) and black ( $r=.402^*$ ) showed a tendency towards a positive correlation.

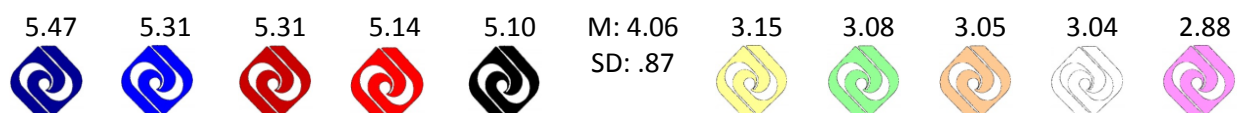
It was found that blue logos ( $M=4.72$ ,  $SD=1.87$ ) and red logos ( $M=4.70$ ,  $SD=1.60$ ) are the best fitting logos for the ruler. Below, the five best and least fitting logos are presented. The best fitting logos are bright or dark and have a red or blue hue. The worst fitting logos are mostly light.



#### Hero

The correlation analysis showed a significant positive correlation for the hero archetype with the characteristic saturation ( $r=.521^{**}$ ) and dark ( $r=.436^{**}$ ). A significant negative correlation was found for the characteristics brightness ( $r=-.500^{**}$ ) and light ( $r=-.774^{***}$ ). No significant correlations between the hero and the different hues were found.

It was found that blue logos ( $M=4.71$ ,  $SD=1.87$ ) and red logos ( $M=4.67$ ,  $SD=1.79$ ) are the best fitting logos for the hero. Below, the five best and least fitting logos are presented. The best fitting logos are red, blue or black and have a medium or dark hue. The worst fitting logos are all light, or completely white.

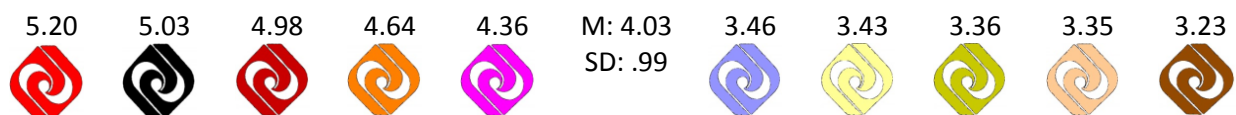


<sup>1</sup>\*=significant at .10 level, \*\*=significant at .05 level, \*\*\*=significant at .01 level.

### Outlaw

The correlation analysis showed a significant positive correlation for the outlaw archetype with the characteristic bright ( $r=,459^{**}$ ) and a significant negative correlation with the characteristic light ( $r=-,569^{***}$ ). Although hues are not significantly correlated with the outlaw archetype, red ( $r=,378^*$ ) and black ( $r=,397^*$ ) showed a tendency towards a significant positive correlation.

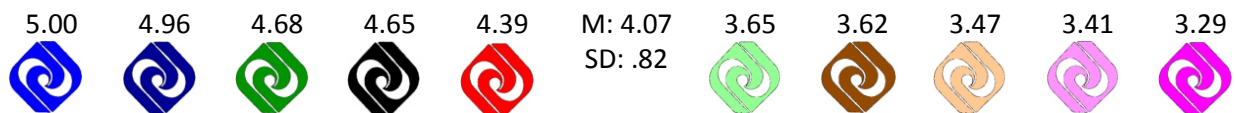
It was also found that red logos (M=4.59, SD=1.81) and logos without colors (M=4.33, SD=1.88) are the best fitting logos for the hero. Below, the five best and least fitting logos are presented. Red, black, and bright colors are among the best fitting logos, while light colors and dark yellow and dark orange form the worst fitting group.



### Sage

The correlation analysis showed a significant positive correlation for the sage archetype with the extent of blue in a logo ( $r=,488^{**}$ ). In addition, it was found that the sage has a significant positive correlation with blue hues ( $r=,567^{***}$ ).

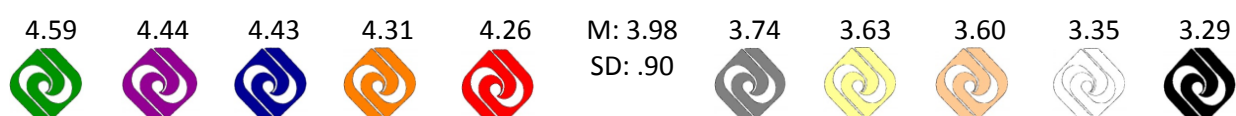
It was also found that blue logos (M=4.75, SD=1.68) and logos absent of color (white, gray, black) (M=4.34, SD=1.88) are the best fitting logos for the sage. Below, the five best and least fitting logos are presented. Blue, bright and dark logos are among the best fitting logos, while the worst fitting logos are orange, purple and green and mostly light.



### Explorer

The correlation analysis showed a significant positive correlation for the explorer archetype with the characteristic saturation ( $r=,562^{***}$ ), and a significant negative correlation with the characteristic light ( $r=-,504^{**}$ ). In addition, the explorer has a significant negative correlation with black ( $r=-,454^{**}$ ).

It was also found that green logos (M=4.24, SD=1.65) and purple logos (M=4.14, SD=1.64) are the best fitting logos for the explorer. Below, the five best and least fitting logos are presented. The worst fitting logos are light or absent of color. The best fitting logos have high levels of saturation.

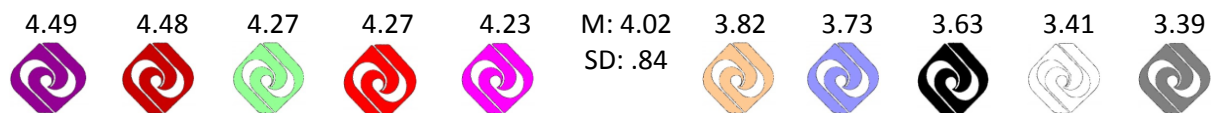




### Creator

The correlation analysis showed no significant correlations between the creator and any of the color characteristics, except for the hue. It was found that the creator has a significant negative correlation with white logos ( $r=-.467^{**}$ ) and gray logos ( $r=-.483^{**}$ ).

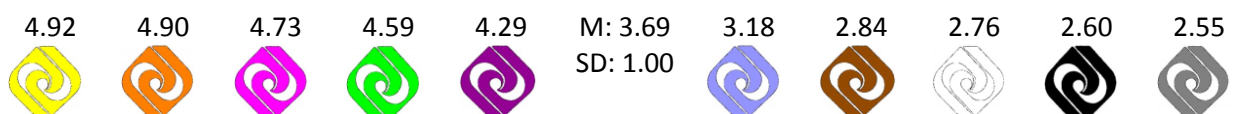
It was found that purple logos ( $M=4.26$ ,  $SD=1.67$ ) and red logos ( $M=4.26$ ,  $SD=1.77$ ) are the best fitting logos for the creator archetype. Below, the five best and least fitting logos are presented. It stands out, that logos absent of color, are the worst fitting logos and bright, dark, red, and purple are the best fitting logos.



### Jester

The correlation analysis showed a significant positive correlation for the jester archetype with the characteristic bright ( $r=.592^{***}$ ). No significant correlations between the jester and the different hues were found.

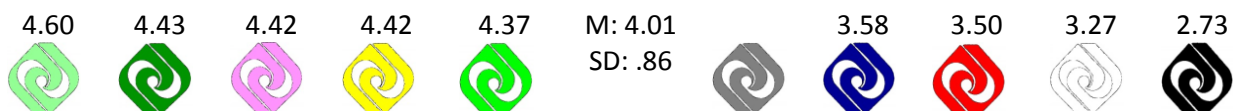
It was found that purple logos ( $M=4.29$ ,  $SD=1.79$ ) and green logos ( $M=4.10$ ,  $SD=1.66$ ) are the best fitting logos for the jester. Below, the five best and least fitting logos are presented. The best fitting logos are bright and have a diverse hue. The worst fitting logos are mostly absent of any color.



### Innocent

The correlation analysis showed a significant negative correlation for the innocent archetype with the extent of red in a logo ( $r=-.511^{**}$ ). It was found that the innocent has a significant positive correlation with a green hue ( $r=.440^{**}$ ). The analysis also showed a significant negative relation with black ( $r=-.642^{***}$ ).

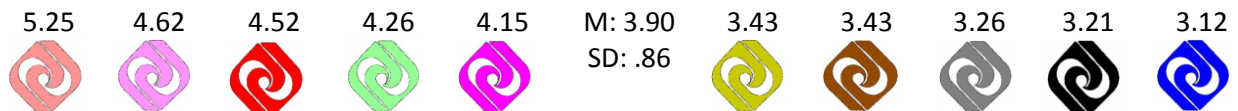
It was also found that green logos ( $M=4.46$ ,  $SD=1.60$ ) and yellow logos ( $M=4.27$ ,  $SD=1.64$ ) are the best fitting logos for the innocent. Below, the five best and least fitting logos are presented. The green logos are in the best fitting logos, while logos absent of color are in the group with the worst fitting logos.



### Lover

The correlation analysis showed a significant positive correlation for the lover archetype with the characteristics brightness ( $r=.477^{**}$ ), light ( $r=.506^{**}$ ), and the extent of red in a logo ( $r=.626^{***}$ ). In addition, it was found that the lover has a positive correlation with a red hue ( $r=.579^{***}$ ).

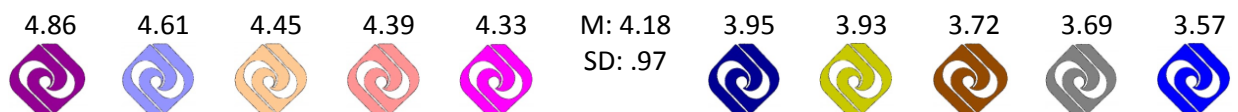
It was also found that red logos ( $M=4.60$ ,  $SD=1.85$ ) and purple logos ( $M=4.21$ ,  $SD=1.60$ ) are the best fitting logos for the lover. Below, the five best and least fitting logos are presented. The logos are light, bright or have an extent of red in the color. The worst fitting logos are mostly dark or absent of any color.



### Magician

The correlation analysis showed no significant correlations between the magician and any of the color characteristics. Although hues are not significantly correlated with the magician archetype, purple ( $r=.391^*$ ) showed a tendency towards a positive correlation and gray ( $r=-.377^*$ ) showed a tendency towards a negative correlation.

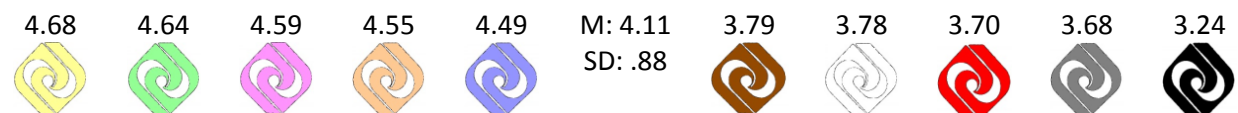
It was found that purple logos ( $M=4.45$ ,  $SD=1.70$ ) and red logos ( $M=4.31$ ,  $SD=1.72$ ) are the best fitting logos for the magician. Below, the five best and least fitting logos are presented. It seems that purple and light logos are the best fitting logos, while the worst fitting logos are dark, gray, and blue.



### Caregiver

The correlation analysis showed a significant positive correlation for the caregiver archetype with the characteristic light ( $r=.552^{**}$ ). In addition, the caregiver has a significant negative correlation with black ( $r=-.530^{**}$ ).

It was also found that yellow logos ( $M=4.35$ ,  $SD=1.58$ ) and orange logos ( $M=4.26$ ,  $SD=1.58$ ) are the best fitting logos for the caregiver. Below, the five best and least fitting logos are presented. The best fitting logos are light. Logos absent of color have the worst fit.

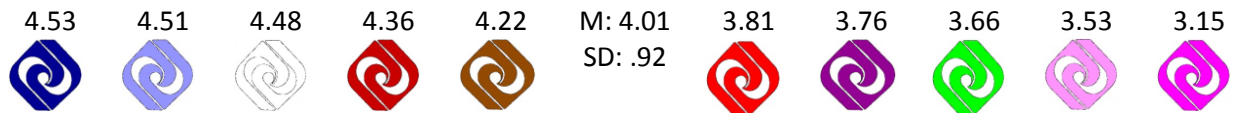


### *Regular guy*

The correlation analysis showed no significant correlations between the regular guy and any of the color characteristics, except for the hue. It was found that the regular guy has a significant negative correlation with a purple hue (-,663\*\*\*).

It was also found that blue logos (M=4.31, SD=1.79) and logos absent of colors (M=4.21, SD=1.83) are the best fitting logos for the regular guy. Below, the five best and least fitting logos are presented.

The best fitting logos are blue, red or white, while all purple logos belong to the worst fitting logos.



## 5. Discussion

There are numerous successful brands that have an archetypical character. Only the last couple of years, empirical studies about archetypes are conducted. The main goal of this study was to find out if colors in logos can visualize archetypes for brands. In this chapter, the conclusions of the study are presented. Based on the results, the main question will be answered. First, the archetype framework will be discussed, followed by a more in-depth discussion per archetype. After that, the value of this study will be discussed, as well as the limitations. In the end there will be given some suggestions for future research.

### 5.1 Archetype framework

Because of the ambiguous distribution of the different archetypes into the different clusters in previous studies (Oosterhout, 2013; Van Nistelrooij, 2013; Bolhuis, 2013; Faber & Mayer, 2009; Jansen, 2006; Mark & Pearson, 2001), this study took another look at the archetype framework. The factor analysis conducted in this study revealed three cluster, presented in figure 5. The names assigned to the clusters are explained in this paragraph, as well as the overlap with archetype frameworks from other studies.

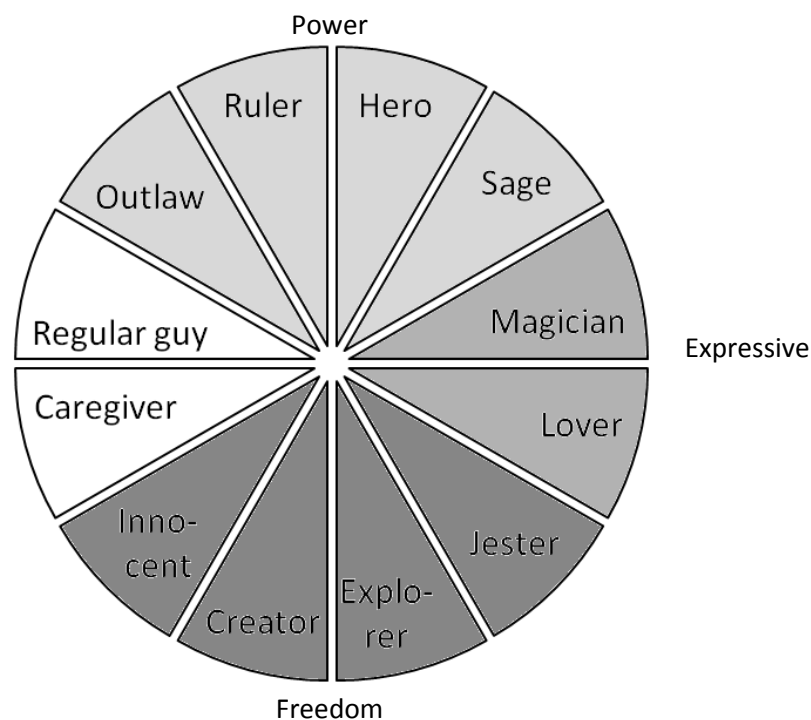


Figure 5. Archetype framework

The archetype framework presented in this study shows differences with other frameworks. Table 9 shows an overview of all previous presented clusters. To visualize the similarities between authors, four different colors have been used. Every color represents two or more archetypes in a cluster.

Table 9

Overview of defined clusters.

	Oosterhout (2013)	Van Nistelrooij (2013)	Bolhuis (2011)	Faber and Mayer (2009)	Jansen (2006)	Mark and Pearson (2001)	Current study
Ruler	Order	Competence	Order	Striver	Order	Mastery	Power
Hero	Order	Competence	Order	Striver	Ego	Stability	Power
Outlaw	Freedom	n/a	Freedom	Conflicter	Freedom	Stability	Power
Sage	Order	Competence	Order	Knower	Order	Independence	Power
Explorer	Freedom	Competence	Freedom	Everyperson	Freedom	Independence	Freedom
Creator	Social	Expressive	Freedom	Knower	Ego	Mastery	Freedom
Jester	n/a	Expressive	Freedom	Everyperson	Freedom	Belonging	Freedom
Innocent	Social	Social	Social	Carer	Order	Independence	Freedom
Lover	Social	Expressive	Freedom	Carer	Social	Belonging	Temptation
Magician	n/a	Expressive	Freedom	Knower	Ego	Stability	Temptation
Caregiver	Social	Social	Social	Carer	Social	Mastery	n/a
Regular	Order	Social	Social	Everyperson	Social	Belonging	n/a
Guy							
Shadow	n/a	n/a	n/a	Conflicter	n/a	n/a	n/a

Carer, Social Conflicter, Expressive, Freedom, Independence Order, Stability, Power Competence, Ego, Mastery, Striver

n/a = not applicable

The cluster with the outlaw, the hero, the ruler, and the sage holds the same archetypes as the cluster of Oosterhout (2013) and Bolhuis (2011), except with the addition of the outlaw. The outlaw is placed in the Freedom cluster or in the Conflicter cluster (see table 9). This can be explained by the different characteristics of one singular color. Black, for example, is among the five best fitting logos in all archetypes in the Order cluster. However, black can stand for powerful in the ruler archetype, while it stands for rebellious in the outlaw archetype. The addition of the outlaw in this cluster makes it difficult to call this cluster Order, while the outlaw is the opposite of Order. Red, black, and blue are among the five best fitting logos in almost all archetypes in this cluster and share the characteristic power. The ruler has power, because it is the leader. The hero is strong and wants to make the customer feel powerful. The sage gets its power from its knowledge and the outlaw is powerful and brave enough to fight against the status quo. That is why this cluster is called Power.

The cluster with the creator, the explorer, and the jester holds the same archetypes as the Freedom cluster of Bolhuis (2011). The explorer and jester are in the Freedom cluster in the study of Jansen (2006). The innocent is the stranger in our midst, while it is mostly placed in the Social (Oosterhout, 2013; Van Nistelrooij, 2013; Bolhuis, 2011) or Carer (Faber & Mayer, 2009) cluster. The results showed that black is among the worst fitting logos for all archetypes in the Freedom cluster. Black stands for authority and power, the opposite of freedom. The innocent archetype stands for a happy and positive approach to life. This could also be explained as a free way of living. Therefore, in this study, it fits in the Freedom cluster.

The magician and lover archetypes in the third cluster are opposites in the frameworks of Bolhuis (2011) and Jansen (2006), or at least far apart (Mark & Pearson, 2001; Faber & Mayer, 2009). An explanation of the magician being in this cluster could be that the archetype lost a bit of its meaning.

Since the introduction of the twelve archetypes in 1919, times have changed. Jansen (2006) and Mark and Pearson (2001) argued that archetypes are timeless. This could be, but the meaning or the interpretation can change. A couple of decades ago, the magician could be associated with rituals and the church, while these influences have decreased the last years. The interpretation of the characteristic mysterious could be changed. A mysterious woman can be elegant, passionate, and loving. These characteristics belong to the colors purple and red, the best fitting logos for both archetypes. The lover is also passionate, loving, and seductive. That is why the cluster is called Temptation in this framework.

The caregiver and the regular guy do not fit in any of the clusters. An explanation could be that the caregiver and regular guy are not as outstanding archetypes as the others. This study measured extreme color differences (high/low saturation and brightness), while these two archetypes are very down-to-earth and simple. It could be that less prominent colors fit the archetypes caregiver and regular guy better. Because these colors are not present in this study, the two archetypes have no connection with the other archetypes.

Similarities in clusters are found when it comes to color characteristics. The ruler, the hero and the outlaw, three of the four archetypes in Power cluster, have a significant negative relation with the color characteristic light. Furthermore, the ruler and the hero have a significant positive relation with the color characteristic dark and a negative correlation with brightness. Although not significant, the ruler and the outlaw show a tendency towards a positive relation with black and red logos. For the explorer, creator, and innocent, there are significant negative correlations with logos absent of color (black, white, gray). For the other cluster, no significant relations were found.

When comparing the archetype framework of this study to archetype frameworks from other studies, it can be concluded that no consistency can be achieved between the different studies (Oosterhout, 2013; Van Nistelrooij, 2013; Bolhuis, 2011; Faber & Mayer, 2009; Jansen, 2006; Mark & Pearson, 2001). It can be concluded that every archetype is exclusive on its own and it therefore is difficult to place them in a cluster. Although some archetypes show similarities, the hero and sage are more orderly or powerful than the explorer and the jester for example, every archetype is unique and it is unlikely that they can be clustered in one comprehensive framework. For example, the magician and lover are clustered in this study, while it are opposites in other frameworks (Oosterhout, 2013; Bolhuis, 2011; Jansen, 2006). Another explanation of the differences between the existing frameworks can be the different study areas. This study concentrates on archetypes and colors. As stated before, one color can have different, conflicting characteristics. Black, for example, stands for authority, but also for rebellious. This means that in this study, the outlaw and the ruler are in the same cluster. Bolhuis (2011) and Van Nistelrooij (2013) studied logo shape characteristics. The archetype frameworks in these studies show more similarities than with this study. Oosterhout (2013) involves word marks in her study and her archetype framework is similar to Bolhuis (2011), but differs from this and other studies (table 9). It can be concluded that the logo characteristic that is studied has a large influence on the outcomes of the archetype framework. Therefore, every study between logo characteristics and archetypes adds a new perspective to the archetype framework.

## 5.2 Logo design

This paragraph will discuss the use of colors in logos per archetype. Every discussion about an archetype is ended with an example of an existing brand.

### *Ruler*

The ruler shows leadership and takes its responsibility. A ruler brand is the leader in its domain (Mark & Pearson, 2001). Black, red, and blue hues show a tendency towards a fit with the ruler. Authority, trust and power are characteristics of these hues (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008) and match with the characteristics of the archetype. According to Labrecque and Milne (2011), blue stands for competence, also a characteristic of the ruler. High levels of brightness, light logo colors and the use of a yellow hue in a logo do not fit ruler brands. This is not surprising, while light colors are associated with softness and openness. Darker colors, who have a more serious character, fit the ruler brand (Sutton & Whelan, 2004). This is in line with the results of Van Nistelrooij (2013), who found that grayscale logos are the best fit for this archetype. Labrecque and Milne (2011) also found that brightness has a negative relation with ruggedness, a characteristic of the ruler. BMW and American Express are examples of the ruler archetype and are in line with the results. They have blue and black logos and stay away from the yellow hue.

### *Hero*

The hero gives customers courage, power, and self-esteem. The brand is ambitious, focused, and powerful (Mark & Pearson, 2001). Blue and red logos are the best fitting logos for the hero. Authority, trust, and power are characteristics that fit these colors, as well as the archetype (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008). In addition, excitement is a good description of the hero (Labrecque & Milne, 2011), which is also a characteristic of red. The hero brand can be visualized by dark logos and logos with a high level of saturation, while a high level of brightness and light logos should be avoided. Except the extent of yellow in the color, the hero has similar results as the ruler. An explanation for this is that both archetypes stand for power and self-esteem. The dark logo of Nike is an example of the expression of the hero in a logo. Another example, although not brand related, is interesting. Some of the most famous super heroes correspond with the results when it comes to colors. Spiderman (red and blue), batman (dark), and superman (red and blue) all use colors that are in line with the findings.

### *Outlaw*

This rebellious brand changes existing situations and is not led by the usual social conventions (Mark & Pearson, 2001). Black and red hues show a tendency towards a fit with the outlaw. Black and red both stand for rebellious and revolution (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008), which is in line with the characteristics of the outlaw. The outlaw brand can be visualized by bright logos. An explanation for this is that bright logos stand out, compared to other colors. Light colors, on the other hand, do not express the outlaw. An explanation for this is that light colors take their lightness from an absence of visible color in their composition (Sutton & Whelan, 2004). When lightness increases, differences between hues decrease, while the outlaw is best visualized by strong and visible hues. An example of an outlaw brands is Harley-Davidson. By not choosing a color at all (black), the outlaw stands out. This is in line with its rebellious character (Mark & Pearson, 2001).

### *Sage*

This brand uses intelligence and analysis to understand the world and to develop themselves. The brand is continuously gathering information and knowledge to increase its experience and expertise (Mark & Pearson, 2001). Positive relations were found for a blue hue and logos with an extent of blue in them. Blue stands for authority, wisdom, and loyalty (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008), which is in line with the sage archetype. Colors with an extent of blue, like green or purple, also show a fit with the archetype. Green is a calming color and a characteristic of purple is authority. Labrecque and Milne (2011) found that blue has a relation with competence. This is all in line with the characteristics of the sage. The blue and simple logo of IBM is an example of the expression of the sage in a logo.

### *Explorer*

The explorer helps people to achieve freedom and independence. The brand is continuously searching for new adventures and products (Mark & Pearson, 2001). The use of black and white logos should be avoided. A logo absent of color is not challenging the explorer. Light logos should also be avoided. Explorer brands can be visualized by logos with a high saturation level. These colors are less striking, more natural, and fuller. For example, orange with a high level of saturation looks like brown. This is in line with the other findings, since positive relations were found for saturation and dark logos. The logo of Landrover is green and has a logo with a high level of saturation. This is in line with the findings of this study.

### *Creator*

The creator helps people to try new things in a creative way. The products of this brand are original and innovative (Mark & Pearson, 2001). Although no positive relations were found, the creator has a negative correlation with white and gray logos. This is in line with the expectations, because gray stands for conservative and old-fashioned (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008). This is the opposite of a creative brand. White is absent of any hue, which could explain the negative correlation. No correlations with other color characteristics were found. This study only measured the effects of logos with one color, while more colors increase the richness of a logo and therefore the possibility to use the colors on a creative manner (Van Nistelrooij, 2013). Examples of the creator archetype are Lego and Google. Lego and Google use multiple colors in their logo. It seems that a good visualization of the creator brand is a logo with multiple colors.

### *Jester*

The jester entertains people in a clownish and funny way. This brand places everything in perspective by using humor. Only the fun and happy side stay visible (Mark & Pearson, 2001). The jester has no significant correlation with one particular hue. Van Nistelrooij (2013) found that the number of colors in a logo have is positively related to the fit with the jester archetype. He also found that colored logos fit better in general than grayscale logos. This could be an explanation for the absence of significant correlations with one particular hue. Another explanation is that the brightness of the logo is more important than the hue. The jester brand can be visualized with logos with bright colors. That white, black, and gray are among the worst fitting logos enhances this. Also, four of the five best fitting logos are bright. The bright colors that Pringles uses for their products is an example of the jester archetype, just as the bright color of Fanta.



### *Innocent*

The innocent gives people a happy and positive approach to life. The brand is sincere, trusting, and wants to do good for everyone (Mark & Pearson, 2001). The identity of the innocent brand can be visualized by the use of a green hue in the logo. The innocent has a positive relation with a green hue. The color contains characteristics like calming, natural, and inexperience (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008), which is in line with the characteristics of the archetype. In addition, black logos and logos with an extent of red in it do not visualize the identity of the innocent brand. Red is an emotional color that expresses aggression and passion, while black is a rebellious and powerful color (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008). This is in line with previous research. Van Nistelrooij (2013) stated that an innocent brand should be colorful and open. The green color in the logo of The Body Shop is appropriate to express its reliable and honest personality.

### *Lover*

The lover is all about beauty, temptation, and contact with others. Its products are passionate and seductive (Mark & Pearson, 2001). The lover has a positive relation with a red hue. Love, passion, femininity, and softness are characteristics of the color red (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008) and fit with the description of the lover. Labrecque and Milne (2011) found that excitement is positively correlated with a red hue. This endorses the findings in this study. In real life, red and love are inseparable. A heart is red, just as lipstick that stands for seduction. The identity of a lover brand can be visualized with bright and light logos, and with logos with an extent of red in it, while dark logos do not fit the lover archetype. This is in line with other research. Dark colors stand for winter, while light and bright logos stand for attracting attention and opening up (Sutton & Whelan, 2004). The red and pink colors that Victoria's Secret uses are appropriate to express its romantic and passionate personality.

### *Magician*

The magician helps people to create changes in their lives. To reach this goal, the brand often uses rituals, what makes it mysterious (Mark & Pearson, 2001). The identity of a magician brand can be visualized by the use of a purple hue in the logo. Characteristics of purple are flamboyant and mysterious (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008). This is in line with the characteristics of the magician. The absence of significant relations can be explained by the lack of associations people nowadays can make with the magician, that stands for rituals and mystery. The purple color that Hallmark uses is appropriate to express its mysterious and dreamy personality.

### *Caregiver*

The caregiver is caring, compassionate, and generous for their customers and the society in general. The products of this brand help people in their daily activities (Mark & Pearson, 2001). The caregiver has a negative correlation with black. A black hue stands for authority and power (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008), which is not in line with the generous and caring character of the caregiver. The identity of the caregiver brand can be visualized with the characteristic light. People should feel comfort and compassion with this archetype. Light colors look more compassionate than dark colors as black and brown. An examples of a caregiver brand is Nivea. This brands uses a light version of blue in its logo.

### *Regular Guy*

The regular guy is accessible for everyone, because it represents the normal guy or woman. The brand is realistic and wise (Mark & Pearson, 2001). The regular guy has a negative correlation with purple logos. Purple can be characterized by flamboyant, luxurious, and mysterious (Johnson, 2007; Frank & Gilovich, 1988; Sabanovich, 2008). This is the opposite of the regular guy who is down-to-earth. The regular guy has no other significant effects. An explanation for this is that the logo should not be too overwhelming, as the personality of this brand is also normal and realistic. This is in line with Van Nistelrooij (2013) who found that regular guy logos should not be too decorative. The gray and deep blue colors that Volkswagen uses is appropriate to express its down-to-earth and everyman's personality.

### 5.3 The main question

The main question of this study was: 'To what extent can archetypes be visualized with colors?'. For seven of nine logo hues, significant results were found. For yellow and orange hues, no significant correlations were found. This can be explained by the diversity of the three variants of the hues. The dark version of orange is brown and the dark version of yellow is leaning towards beige or green. Characteristics of brown, for example, are earthy and stability, while the characteristics of orange are enthusiasm and playful. These are so far apart that no singular archetype can correlate with the characteristics of all three variants of the orange hue. Furthermore, all significant correlations of white and gray logos are negative. It can be concluded that the use of white and gray logos should be avoided. It was also interesting to see that, for example, the best fitting logo for the archetypes hero and regular guy are both blue with high saturation and low brightness. For the regular guy, this logo can be explained as normal and often used. For the hero this logo can express power. The same applies to the outlaw and the ruler archetype. Both archetypes have a positive relation with black logos. For the outlaw, black stands for rebellious, while it stands for power for the ruler archetype. It can be concluded that, however a brand can use a specific color for its logo to make it more consistent with their archetypical positioning strategy, it is also related to the interpretation of the color.

Also for eight of the nine color characteristics, significant results were found. No significant correlations were found for the temperature (warm/cold) of a color. This can be explained by the scope of the color characteristics. The hues purple, blue, and green are all cold colors, while the characteristics of the three hues are very different. The same applies to warm colors.

Thus, it is found that colors have the potential to increase the fit between a logo design and the archetypical positioning strategy. However, a logo alone is not enough. The logo should fit the total brand personality.

### 5.4 Added value

Although archetypes are used in branding, little empirical studies have been conducted. Where Van Nistelrooij (2013) and Bolhuis (2011) focused on logo design, Oosterhout (2013) focused on word marks in logos. This study adds the use of colors in logos. Van Nistelrooij (2013) already suggested that colors have the possibility to increase the fit between an archetypical positioning strategy and the logo. This study endorses the findings of Van Nistelrooij (2013) and found various relations between brand archetypes and color characteristics. This is the first study that investigates the direct relation between archetypes and colors. The results of this study can be used by marketers, logo designers, brand builders, or other practitioners who are working with brand logos. The findings in this study can be used to make a logo with the right associations for the brand archetype. This study complements the existing framework of logo design for the use in the archetypical positioning strategy. By combining specific word marks (Oosterhout, 2013), logo shapes (Van Nistelrooij, 2013; Bolhuis, 2011), and logo colors, a brand logo can be built that is in line with the archetypical positioning strategy.

## 5.5 Limitations and future research

Archetypes are already linked to word marks (Oosterhout, 2013), interior designs (Van Erp, 2012), and logo shapes (Bolhuis, 2011; Van Nistelrooij, 2013; Wolthuis, 2010). This study provides new insights regarding logo colors and archetypes. However, the results should be validated in the future.

The logos used in this study are not from existing brands, but collected from a study about logo colors of Labrecque and Milne (2011). This study showed that all logos are rated neutral, except the hexagonal logos for the regular guy and the creator archetype. This means that for these archetypes, beside the logo color, the logo shape also influenced the outcomes. Future research should eliminate these influences and validate the outcomes of this study.

The logos in this study only consist of symbols, while other elements of the logo could also influence the perception of a brand (Henderson & Cote, 1998). Van Erp (2012) already studied the influence of interior design, while the link between archetypes and photography is an interesting field of study for the future.

Furthermore, the participants in the preliminary study mainly focused on the hue of a color (e.g. red or blue), while other characteristics are sometimes overshadowed. This influenced the choice for the color selection in the main study. Furthermore, this study focused on extreme (high/low) saturation and brightness levels. The absence of neutral colors could also explain the lack of significant relations for down-to-earth archetypes such as the regular guy. This could also have influenced the archetype framework. Future research should find out if neutral logos show a fit with certain archetypes and if this would influence the archetype framework. In addition, this study only contains logos with one color, while numerous brands use more than one main color. Ikea uses blue and yellow, while Ebay uses red, blue, yellow, and green. It is possible that certain combinations of colors contain other characteristics than separate colors. This could be an interesting topic for future research.

Another limitation can be found in the selection of the respondents. Most of the respondents are Dutch, thus cultural differences are not taken into account, while previous studies found that colors can evoke different emotions in various countries (Schmitt & Pan, 1994; Aslam, 2006). Since the surveys were spread online, the setting of the respondents could not be monitored. Differences in screen settings and other influences (e.g. music, mood) were not taken into account.

All previous research, including this study, focused on the characteristics of archetypes and an element of the corporate visual identity. However, it would also be interesting to see if preferences of (potential) customers have an influence. It could be that people who prefer the color red have other associations when they see a red logo than others.

This research is an addition on previous studies that linked archetypal branding to characteristics of logo design. This study found empirical evidence that the use of colors in logos help a brand to express a specific archetype. This study presents a discussion regarding the clustering of archetypes in an archetypal framework and guidelines regarding the use of logos for particular archetypes. Both scientists and practitioners could take advantage of these findings by using the results or expanding the research field in this area.

## 6. Acknowledgements

I can finally say that I have finished my master Communication Studies. Looking back, the thesis was 'le grande finale' of all my college years. A good friend of mine ingeniously described this process once (Scholte Lubberink, 2013). He compared the process of writing a master thesis with climbing the very famous Half Dome in Yosemite National Park, California, USA. This colossal rock is really enormous and almost impossible to hike, but once at the top, it is worth all the effort.

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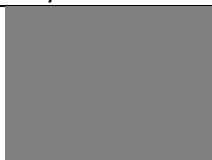

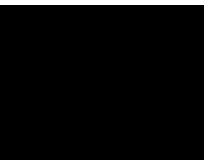
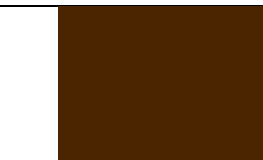
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## 8. Appendices

### Appendix A: Colors used in the preliminary study

Gray	White	Black	Brown
			

Saturation and brightness levels	High saturation Low brightness	High saturation Medium brightness	High saturation High brightness
Red			
Blue			
Green			
Yellow			
Purple			
Orange			
Pink			

Saturation and brightness levels	Med. saturation Low brightness	Medium saturation Medium brightness	Medium saturation High brightness
Red			
Blue			
Green			
Yellow			
Purple			
Orange			
Pink			

Saturation and Brightness levels	Low saturation Low brightness	Low saturation Med. brightness	Low saturation High brightness
Red			
Blue			
Green			
Yellow			
Purple			
Orange			
Pink			

## Appendix B: Form used in the preliminary study

The form below was used to list the data from the photosort method. There was a separate form for every cluster. The characteristics are in Dutch, because all respondents were Dutch. The characteristics are translated from the English characteristics by Johnson (2007), Frank and Gilovich (1988), and Sabanovich (2008).

Respondentnummer	
Cluster nummer	
Nummer foto's die bij cluster zijn neergelegd	
Motivatie van respondent	
Naam cluster	







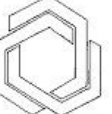
























































Eigenschappen die bij cluster horen (aankruisen).

aandacht trekkend	liefde	stabiliteit
aards	loyaliteit	steriliteit
agressie	luxue	stijlvol
autoriteit	milieu	sympathiek
bescheiden	modern	veiligheid
conservatief	moed	verfrissend
eenvoudig	mysterieus	verlichtend
elegant	natuurlijk	vertrouwen
emotioneel	onervarenheid	verveling
energie	onschuldig	vitaliteit
enthousiasme	openheid	vreedzaam
flamboyant	opstandig	vriendelijkheid
geestelijkheid	optimistisch	vriendschap
gezond	ouderwets	vrolijk
helder	passie	vrouwelijkheid
hoop	plezier	waardigheid
intelligent	revolutie	wijsheid
kalmerend	solide	zachtheid
karakteristiek	speels	zuiver
krachtig		

## Appendix C: The logo sets used in the main study

Table 1

*The logo sets used in the main study.*

						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7
						
Logo 1	Logo 2	Logo 3	Logo 4	Logo 5	Logo 6	Logo 7

## Appendix D: Evaluations for each fit between a logo and an archetype

Table 2

*Number of measurements between a color and an archetype.*

	Creator	Caregiver	Ruler	Jester	Regular Guy	Lover	Hero	Outlaw	Magician	Innocent	Explorer	Sage
Blue Light	64	61	58	60	57	58	57	61	57	58	62	67
Blue Bright	65	62	60	57	60	57	58	58	60	60	62	67
Blue Dark	64	59	61	58	58	58	58	58	58	62	65	68
Green Light	62	70	54	60	55	58	59	56	61	57	68	68
Green Bright	63	57	63	56	65	54	60	56	58	62	58	66
Green Dark	68	56	61	59	55	61	55	65	56	60	63	68
Purple Light	63	70	55	60	55	58	59	38	61	57	68	68
Purple Bright	62	57	63	56	65	54	60	56	58	62	58	66
Purple Dark	68	56	61	59	55	61	55	83	56	60	63	68
Yellow Light	68	38	61	58	55	61	55	65	56	81	63	68
Yellow Bright	63	87	55	60	55	58	59	56	60	57	68	68
Yellow Dark	62	57	63	56	65	54	60	56	58	41	58	66
Orange Light	68	38	61	59	55	61	55	65	56	81	63	68
Orange Bright	63	88	55	60	55	58	59	56	61	57	68	45
Orange Dark	62	57	63	56	65	54	60	56	58	41	58	89
Red Light	66	60	57	58	63	57	57	64	59	41	82	63
Red Bright	63	63	61	59	54	58	59	56	58	56	42	71
Red Dark	64	60	61	58	58	57	58	55	59	82	65	68
Black	63	63	61	58	54	58	59	58	58	56	42	71
White	66	60	57	58	62	57	57	55	59	41	82	63
Gray	64	60	61	58	59	58	58	58	58	82	65	68



## Appendix E: Results one-way ANOVA

Table 3

*Results of the one-way ANOVA*

Logo shape	Diamond	Hexagonal	Triangular
Ruler	,822	,649	,217
Hero	,478	,535	,397
Outlaw	,632	,178	,613
Sage	,730	,303	,320
Explorer	,881	,245	,413
Creator	,697	<b>,018*</b>	,282
Jester	,949	,328	,587
Innocent	,994	,201	,203
Lover	,494	,619	,345
Magician	,180	,886	,126
Caregiver	,887	,857	,185
Regular Guy	,391	<b>,016*</b>	,097

## Appendix F: Results of the correlational analyses

Table 4

*Correlational analysis between archetypes and color characteristics.*

Color characteristics	Saturation	Brightness	Light	Bright	Dark	Temperature	Extent Red	Extent Yellow	Extent Blue
Ruler	,319	<b>-,476*</b>	<b>-,580**</b>	,005	<b>,436*</b>	-,040	,255	<b>-,537*</b>	,282
Hero	<b>,521*</b>	<b>-,500*</b>	<b>-,774**</b>	,137	<b>,481*</b>	-,169	,167	-,457	,295
Outlaw	,352	-,067	<b>-,569**</b>	<b>,459*</b>	,065	,035	,404	-,326	-,078
Sage	,251	-,300	-,374	,061	,284	-,253	-,146	-,342	<b>,488*</b>
Explorer	<b>,562**</b>	-,239	<b>-,504*</b>	,131	,258	-,341	-,064	-,201	,265
Creator	,407	-,244	-,351	,071	,287	-,152	,265	-,231	-,035
Jester	,398	,358	-,288	<b>,592**</b>	-,274	-,181	-,040	,047	-,007
Innocent	,060	,306	,086	,086	-,279	-,346	<b>-,511*</b>	,419	,092
Lover	-,399	<b>,477*</b>	<b>,506*</b>	,027	-,404	,162	<b>,626**</b>	-,331	-,295
Magician	-,364	,089	,341	-,188	-,022	-,097	,269	-,202	-,067
Caregiver	-,381	,411	<b>,552**</b>	-,175	-,350	-,041	-,361	,415	-,054
Regular Guy	-,032	-,285	-,188	-,358	,041	,289	-,186	,152	,034

Table 5

*Correlational analysis between archetypes and hues.*

Hue	Blue	Green	Purple	Yellow	Orange	Red	Black	White	Gray
Ruler	<b>,402*</b>	-,218	-,272	-,330	-,242	<b>,391*</b>	<b>,402*</b>	-,135	,174
Hero	,313	-,033	-,098	-,309	-,212	,291	,279	-,274	,072
Outlaw	-,131	-,057	,049	-,227	-,206	<b>,378*</b>	<b>,397*</b>	-,089	,010
Sage	<b>,567***</b>	-,015	-,336	-,277	-,218	,069	,263	,009	,073
Explorer	,157	,304	,189	-,037	-,108	,122	<b>-,454**</b>	<b>-,415*</b>	-,161
Creator	-,044	,229	,322	,063	-,136	,326	-,300	<b>-,467**</b>	<b>-,483**</b>
Jester	-,102	,244	,350	,111	,009	-,010	-,341	-,291	-,357
Innocent	-,058	<b>,440**</b>	,251	,261	,019	-,222	<b>-,642***</b>	-,367	-,128
Lover	-,268	-,002	,264	-,135	-,066	<b>,579***</b>	-,315	-,006	-,292
Magician	-,195	,056	<b>,391*</b>	-,088	-,070	,172	,028	-,087	<b>-,377*</b>
Caregiver	-,021	,256	,108	,304	,160	-,202	<b>-,530**</b>	-,202	-,263
Regular Guy	,382	-,191	<b>-,663***</b>	,122	,072	,047	-,068	,323	,124