The communicative value of corporate logos

Assessing assimilation effects between logo characteristics and the context information about an organization

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Abstract

Purpose: This study investigates the assimilation effect between the characteristics of an organization and the evaluation of a new logo. Next to the evaluation, logo characteristics are given, which are required to be associated with the logos. Thereby it is of interest if specific logo characteristics are still stable when the context information about an organization is given. Earlier research already found specific characteristics that were associated with different logos, but they did not include the context information about an organization as a crucial factor.

Method: In total, 106 participants completed an online experiment. Different scales, including logo characteristics, were used to assess the associations of participants with various logotypes (Circular and angular shape/complete and incomplete typeface). To assess the evaluation of a new logo within the context of the organization, a scale including statements for evaluation was used. Univariate analyses of variance were carried out to explore the various effects between the variables.

Results: Results showed that most of the chosen logos were associated with different characteristics than stated in earlier research. Circular shaped logos were associated with characteristics that are stronger associated with circular shapes as well as angular shapes. Complete and incomplete typefaces were associated with the opposite characteristics. Findings further displayed that the context information about the organization played only partly a role in the judgment of the organization's logo. Therefore an assimilation effect was not present in the majority of the cases.

Conclusion: Analyses of the assimilation effects and logo characteristic associations provide new information within the research domain of assimilation effects. It was expected that the context information about the organization would influence the participants' evaluation of the logo as well as its associations with specific characteristics. This was not the case within the majority of the situations. The different logos were associated with different characteristics than expected. Earlier research about this subject suggested different results. Organizations need to take into account that their corporate logo might not communicate the desired values of the organization. They need to be aware of the fact that people have different associations regarding a logo and therefore regarding the organization it represents. Organizations should focus on stating their values clearly, resulting in their visual appearance undoubtedly displaying what they stand for.

Contents

1. Introduction

Corporate visual identity (CVI) is the visual self-presentation of an organization. Name, logo, slogan, color, photography and typeface display different aspects of the CVI of an organization (Van den Bosch, de Jong, & Elving, 2005). CVI supports the visual depiction of an organization. It reflects the company's identity by which it stands out against competing organizations. The roots of today's CVI are already found in the antiquity, where craftsmen applied marks on their products as a sign of warranty. Later in the middle ages shields were used to be recognized in battles or to clarify a membership to a family or a house. Likewise today, visual aspects foster membership. Logos, for example, can enable the identification with a brand and its differentiation form competitors (Park, Eisingerich, Pol, & Park, 2013). CVI provides visibility and recognizability, symbolizes the organization and allows employees to identify with the organization as a whole (Van den Bosch, Elving, & de Jong, 2006).

Foroudi, Melewar, and Gupta (2014) state that corporate logos have several functions. First, logos function as kind of signature of the company. Second, logos are a sign of company and product distinctiveness. Third, logos function as a reflection of the company's reputation. The latter is supported by van den Bosch, de Jong, and Elving (2005), who found that CVI in general has the potential to support the reputation of an organization. These functions visualize the importance of a corporate logo and its influence on an organization.

CVI is of major importance for organizations. As Graser (2000, p.8) stated, "design moves things from an existing condition to a preferred one". Organizations can use this asset of CVI to make clear who they are and what they stand for. Often the visual style of organizations is an important factor for developing uniqueness (Witz, Warhust, & Nickson, 2003).

To generate a unique visual style the right choices about all parts of the CVI must be made. Logos can be seen as the primary visual illustration of the image of an organization (Henderson & Cote, 1998). This specific subject will be elaborated more thoroughly in the present research. Selecting the right logo depends on a variety of factors that need to express the individuality of the organization. Henderson and Cote (1998) defined four aspects that make a logo "good" (p. 15), which are recognizability, familiarity, meaning and affect. They refer to the recognition of the logo by the customers, the perception of a familiar object, the facilitation of the same meaning and the evocation of positive feelings by looking at the logo. Logos, especially their shape, also provide customers with characteristics about what the organization stands for.

In their study, Henderson and Cote (1998) discuss more abstract characteristics of logos. Naturalness, for example, is characterized as reflecting common objects that often are described as organic because of their natural shape. Harmony, as a characteristic, is combining symmetry and balance, and balance again is a characteristic that is related to symmetry because it consists of a center between two weights or sides. Complexity, on the other hand, is a characteristic that consists of more and different design features, which therefore makes it complex. Active designs are ones that facilitate the impression of movement and that are associated with symmetry or balance. Depth, as a last example, consists of a three-dimensional design and is associated with complexity.

The characteristics of more classical logo shapes range from circles, standing for perfection, triangles, standing for harmony, or cubes, standing for stability (Adîr, Adîr, & Pascu, 2012). Henderson, Cote, Leong, and Schmitt (2003) conducted research about different logo design characteristics in Asia. One of their findings revealed that the angular building of the Bank of China was generally associated with power, but also with conflict. Roundness, on the other hand, was associated with characteristics like "good" and "beautiful" (p. 300). The authors found that these specific design traits had a great effect on consumers' opinions about the organization. Jiang, Gorn, Galli, and Chattopadhya (2015) found that logo shapes influence consumers' perceptions about the company and its products. Their study showed that circular logos were associated with softness and the products of such companies were therefore affiliated with comfort. Likewise, angular logos were associated with hardness, and the products of such companies were affiliated with durability.

Another aspect of CVI is the typeface a company uses for its name or its abbreviation. Typefaces, fonts or colors influence the perceptions of customers about an organization or its products (Grohmann, Giese, & Parkman, 2012). Hagtvedt (2011) studied the impact of incomplete typeface logos. He found that these logos are perceived as interesting and creative. Organizations with such logos are generally viewed as innovative. However, organizations with complete typeface logos are perceived as more trustworthy. The specific characteristics and design traits of the logo of an organization can distinctively evoke the idea for which it stands. This explains why it is important for an organization to select a logo that fits the organizational values and characteristics.

From time to time, organizations change their CVI. Such a change can range from minimal to drastic. Reasons for change vary from merging two companies to wanting modernization in the CVI. A change in CVI must be carefully managed and implemented. All stakeholders of the organization must know what that change will be about, and what it means for them as shareholders, employees or management. If the change of a CVI shall be successful, it is furthermore of crucial importance to reflect on customers' opinions concerning the redesign. For example, in 2013, *Yahoo!* performed a small logo change in color and typeface. As a result, customers twittered about it as being "boring". Drastic changes may also result in negative word of mouth. The accounting industry firm *Ernst & Young*, always having been considered as a professional service firm, performed a drastic change in typeface, color and shape of their logo. They now used the abbreviation "EY" and changed the logo colors from black to grey and yellow. Ultimately the change of the CVI led to a loss of respectability and the company was associated with an advertisement agency or a startup firm. Especially this last example illustrates that it plays an important role which kind of associations customers have towards an organization and how they perceive its logo. Collange and Bonache (2015) found if customers know the characteristics of the organization and have positive feelings about it, it is more likely that they value this change in a more positive way. Additionally this might lead to positive word of mouth advertising about the organization and its products. Negative feelings about an organization or not knowing the organization, on the other hand, might lead to negative word of mouth advertising. Moreover, the characteristics that an organization pleads to stand for might play a role in how customers perceive its logo. Van Riel and van den Ban (2001) actually did research on a related effect. In their study they found that positive associations of customers increased when they were

confronted with the company name behind the logo. Bolhuis, de Jong, and van den Bosch (2015) discovered that idiosyncratic characteristics of an organization influence the appreciation of a corporate logo change. In fact, none of these studies included the context information about an organization as a variable. No study investigated if there are assimilations between a corporate logo and the background information of an organization. The communicative value of logos needs to be elaborated more thoroughly.

This study addresses the gap in research about assimilation effects when both the organization's characteristics and its logo are given. Earlier studies only investigated logo characteristics and associations. Since no study actually explored the effects of organizational characteristics on the evaluation of and associations with logos, this study investigates whether there is an assimilation processes between those phenomena. This results in the following research question:

Is there an assimilation effect between the characteristics of an organization and the evaluation of a new logo?

The following sections discuss the conceptual background of this study, together with several hypotheses. Afterwards, research methodology and results will be presented. Finally, a discussion of the findings, limitations and implications will be given.

2. Theoretical framework

2.1 Corporate visual identity change

The change of a CVI is an important issue for organizations. CVI change is also referred to as corporate rebranding, which is the consistent expression of the corporate brand that can take place at any time (Balmer, 2010). Actually a CVI change is part of the corporate rebranding, which includes changes in the overall marketing strategies and principles (Ing, 2012). Reasons for a CVI change, for example, can be globalization, mergers or acquisitions (Melewar, Hussey & Srivoravilai, 2005). Other reasons can be a change of the corporate strategy (Van Riel & van Hasselt, 2002), rejuvenation or modernization of the organizational appearance (Müller, Kocher, & Crettaz, 2013), a change of the corporate identity (Melewar & Akel, 2005) or the need for creating a new positive image (Stuart & Muzellec, 2004).

A change of the CVI not only affects all internal stakeholders of an organization but also stakeholders outside the organization. Customers may resist or accept a CVI change. This does not only depend on personal taste, but on the perceptions that customers already have about the organization. Trust for example is an issue that promotes the liking of a new CVI and negative emotions like anger or dissatisfaction lead to resistance against a CVI change (Collange & Bonache, 2015). A CVI change affects employees more than customers, because employees are more attached to the organization and customers rarely encounter new CVIs (Bolhuis, de Jong, & van den Bosch, 2015). Therefore, the involvement of employees and also customers must be well managed while changing the CVI. Moreover, the financial performance of an organization can be affected by changing the CVI. A study of Hanson, Mattila, O'Neill, and Kim (2009) showed that the net income of organizations could decline after a rebranding activity.

Research explored several enablers and barriers when an organization is facing a CVI change. Miller, Merrilees, and Yakimova (2014) performed research on this subject and found six enablers and five barriers to corporate rebranding. Examples for enablers are strong rebranding leadership and internal brand activities and possible barriers are stakeholder tensions and inadequate research about the new strategy.

Additionally, the context situation plays a role within CVI change. As already mentioned above, perceptions that customers have about an organization affect the judgment of a CVI change. These perceptions include the commitment that customers have for an organization. Walsh, Winterich, and Mittal (2010) found that highly committed customers rate a drastic change more negatively as opposed to less committed customers. Furthermore, organizational characteristics are to be considered when changing the CVI. Organizational characteristics, for example, are the size of the business or the competitiveness of an organization (Thong & Sap, 1995). Other characteristics are the sector wherein the organization operates, the amount of innovation the organization provides (Jackson, Schuler, & Rivero, 1989), the quality of the service as well as the quality of the practices (Adams & Bond, 2000). In fact, not only the organization itself in its description facilitates specific characteristics, but also the visual expression, for example the logo of the organization, communicates several characteristics. This will be discussed more detailed in the section below.

2.2 Logos

Logos are a strong part of an organization's CVI. The logo of an organization facilitates the identification with the organization or the brand behind it, for employees as well as for customers (Park, Eisingerich, Pol, & Park, 2012). Furthermore, logos differentiate organizations from their competitors. As mentioned above, logos are able to communicate a specific context about an organization. Earlier research already exhibited different characteristics to which several geometric shapes are associated. Shapes that are angular, like cubes, rectangles or squares are associated with characteristics as duration, stability or power, whereas circular shapes like circles or ellipses are more likely associated with softness or balance (Jiang, Gorn, Galli, and Chattopadhyay, 2015; Adîr, Adîr, & Pascu, 2012). Other shapes, such as spirals and pyramids are respectively associated with advancement and integration (Adîr, Adîr, & Pascu, 2012). Typefaces of a logo are another aspect that facilitates different associations. Childers and Jass (2002) found that delicate typefaces are likely to be associated with characteristics such as "gentleness", "thin" and "elegance" and bold typefaces with characteristics such as "strength" and "security" (p. 104). The shape and the typeface of a logo therefore enable several characteristics and associations.

Logo shapes. The shape of a corporate logo is one of the most obvious aspects of the logo. Shapes contribute to the image of an organization through communicating characteristics about an organization to the customers. Circular shapes like a circle or a spiral respectively stand for perfection and balance, and advancement and detection, whereas angular shapes like a square or a rectangle respectively stand for stability and power, and duration and progress (Adîr, Adîr, & Pascu, 2012). Jiang, Gorn, Galli, and Chattopadhyay (2015) discovered additional associations with circular and angular shaped logos. Products of organizations with circular logos were generally associated with comfort, while products of organizations using angular logos were perceived as being more durable. This observation supports the statement of Adîr, Adîr, and Pascu (2012) where angular shapes stand for durableness.
Therefore, the first hypotheses are as follows:

Hypothesis 1a: *Circular shaped logos will be associated more strongly with characteristics as "Care", "Harmony" and "Warmth" than angular shaped logos.*

Hypothesis 1b: *Angular shaped logos will be associated more strongly with characteristics as "Achievement", "Competition" and "Strength" than circular shaped logos.*

Logo typefaces. The typeface of a logo consists of different characteristics. There are design traits such as symmetry, activity and complexity. However, graphical elements of the font play a crucial role in the design as well. It is of importance whether the font is short or tall, serif or sans serif or condensed or extended (Henderson, Giese, & Cote, 2004). These different characteristics have a special impact on the organization represented by the logo. Childers and Jass (2002) recognized that the design of the typeface affects the perceptions of the customers of an advertised brand or the organization itself. Different design characteristics provoke different effects of liking. From earlier research it is known that complex and incongruent designs are less liked than simple and congruent ones (Van den Bergh & Vrana,

1998). Other studies, however, showed the reverse effect, that more detailed and complex design characteristics are being more liked (e.g. Berlyne, 1971; Hirschman, 1980). Another important aspect of design traits is the completeness or incompleteness of a logo typeface. Many of the logos that are set up with the complete or incomplete typeface represent the name of the organization. Incompleteness of a typeface is typically exemplified by the IBM logo. "In the IBM logo, there are blank stripes across the letters, as if parts of the characters are missing" (Hagtvedt, 2011, p. 1). Hagtvedt (2011) noticed that incomplete logos were associated with lower trustworthiness of the organization but with more innovativeness, which is supported by Cian, Krishna, and Elder (2014).

The following two hypotheses are derived from these observations:

Hypothesis 1c: *Logos with a complete typeface will be associated more strongly with characteristics as "Conventional", "Traditional" and Sstable" than logos with an incomplete typeface.*

Hypothesis 1d: *Logos with an incomplete typeface will be associated more strongly with characteristics as "Dynamic", "Creative" and "Adaptive" than logos with a complete typeface.*

Studies about the characteristics of logos are mostly carried out within laboratories, within artificial research settings. The organizational characteristics or context, which was described in the previous section, does not really play a role here. Therefore, it is not certain if the results from these studies about logo characteristics still have a significance when adding assimilations about organizations. The context information about an organization can strengthen as well as weaken the associations with certain logo characteristics. Therefore, it is conceivable that the findings of the studies mentioned above might have been different in the outcome of the results, if the concept of assimilation had been implemented.

2.3 Assimilation

Scheerer (1980) defined assimilation following the German physiologist, psychologist and philosopher Wilhelm Maximilian Wundt, who described assimilation to be the adaption of a new content of the consciousness to the already existing consciousness. Wundt's definition of assimilation resembles the definition of Carl Gustav Jung (1995), who described assimilation to be an adaption of the object to the subject. Transferring these definitions to an organizational context would signify that if organizations came up with new strategies, a change or the like, customers would take these new information, compare them to their already existing perception of the organization and then decide whether to accept it or not.

Assimilation additionally is an important subject within psychological research. Rudmin (2003) for example investigated four types of acculturation. One of the four types is the assimilation with other cultures. Earlier research of Brewer (1999) studied the assimilation effect within different groups and found that assimilation is an important concept regarding the formation of different groups. Again another domain is the research of physical attractiveness, where assimilation is of importance. Wedell, Parducci, and Geiselmann (1987)

found that photographs of faces were rated as less attractive when they were assimilated with another less attractive face.

Looking back at the corporate domain, and the case of a corporate logo change, assimilation would be "the process in which people's prior experiences with a brand or organization affect their interpretation of CVI elements" (Bolhuis, de Jong & van den Bosch, 2015, p. 5). The study of Van Riel, van den Ban and Heijmans (2001) deals with associations that customers have about an organization. They state that specific properties have an effect on the understanding and interpretation of a new logo. These properties are for example the graphical and referential parts of the logo or the intensity of the communication value of the logo. The authors found that logos can express the organizational identity through these properties, but that the interpretation of the identity varies, also because the customers know the organization behind the logo. This shows that the connection between the corporate logo and the assimilations about the organization as well as the logo characteristics play a role in the judgment of a (new) logo.

Bolhuis, de Jong, and van den Bosch (2015) investigated the effects of a CVI change on customers as well as employees and included specific and idiosyncratic characteristics of the organization. Characteristics they included were the overall judgment, modernity, familiarity and distinctiveness of the organization. They found that the appreciation of a CVI change could depend on the characteristics of an organization. One of their aims for future research includes an experimental study with fictive organizations. This will be approached in the current study, together with organizational characteristics that include the values, positioning and character of the organization.
This leads to the last hypotheses:

Hypothesis 2a: *Circular shaped logos will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*

Hypothesis 2b: *Angular shaped logos will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*

Hypothesis 2c: *Logos with a complete typeface will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*

Hypothesis 2d: *Logos with an incomplete typeface will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*

Hypothesis 3a: *A CVI change into a circular logo will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*

Hypothesis 3b: *A CVI change into an angular logo will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*

Hypothesis 3c: *A CVI change into a logo with a complete typeface will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*

Hypothesis 3d: *A CVI change into a logo with an incomplete typeface will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*

3. Methodology

3.1 Experimental design

An online experiment was chosen as method for data collection. It consisted of several parts including the different variables. The experiment had four conditions; within each condition the logo change of two fictive universities, named *Anne Conway University* and *Martin Luther King University* was presented. *Anne Conway University* was chosen to be changing its logo from a circular logo to an angular one and vice versa. *Martin Luther King University* was chosen to be changing its logo from a complete typeface to an incomplete one and vice versa. An overview of the four conditions can be found in table 1. The purpose of the experiment was to assess if logo changes, that are in line with a university's values and positioning, are judged more positively than when they are not. Additionally the associations that participants had with the different logos were of interest. Within the conditions the variables *Logo judgment* and *Logo associations* were measured. Within the judgment variable various statements for the evaluation of a logo were stated. The associations scale consisted of different characteristics that are associated with a logo (see *3.3 Instrument* for the scales that were used).

Table 1
Conditions.

	Logo change in line	Logo change not in line
Condition 1	Angular logo → Circular logo	Complete typeface → Incomplete typeface
Condition 2	Circular logo → Angular logo	Incomplete typeface → Complete typeface
Condition 3	Complete typeface → Incomplete typeface	Circular logo → Angular logo
Condition 4	Incomplete typeface → Complete typeface	Angular logo → Circular logo

3.2 Manipulation

Context information

The four logos were presented to the participants within specific contexts. These contexts consisted of information about the fictive universities, which were presented to the participants together with the logo that belonged to the university. Within small texts, the universities profiles, research orientations, educational programs and their core values were described. The texts contained specific phrases fitting to the logo characteristics. Short examples of the texts can be found below. The important phrases are highlighted.

Anne Conway University (circular values):

> *Anne Conway University has focused on **quality of life** as main focus in teaching and research. (...) Our research projects focus predominantly on issues of **care**, **safety**, and **wellbeing**. (...). **Well-being** and **personal development** of students are at the **heart** of our graduate and undergraduate programs.*

Anne Conway University (angular values):

*Anne Conway University has successfully worked on a **stellar academic reputation** (...) Our research projects focus predominantly on issues of **efficiency**, **effectiveness**, and management (...). In a **highly competitive** environment, students' progress is monitored by an **excellent** system of tutoring. Students with **outstanding achievements** are given the opportunity to apply for a PhD scholarship.*

Martin Luther King University (complete values):

*Martin Luther King University (MLKU) is an **established** university comprising a broad range of academic disciplines. (...) MLKU strives to excel in all of its disciplines, with a strong emphasis on **fundamental** research. MLKU provides researchers in all disciplines and a **stable** context to perform.*

Martin Luther King University (incomplete values):

*Martin Luther King University (MLKU) is a **young** and **innovative** university with a clear focus on **current** societal issues, **nontraditional** teaching methods and **multi-disciplinary research**. (...) Founded in 1950, the university has always been known for its **dynamism** and **pioneering** mentality.*

Within the experiment, the participants saw a change in the university's logo. Therefore, small texts were created, which contained information about the university's motivations behind the change of the logo. These texts again emphasized the specific phrases that expressed the university's core values and positioning. Short examples of the texts can be found below with the essential phrases highlighted.

Anne Conway University (circular values):

*After ten years of excellent service, the current logo of Anne Conway University (ACU) will receive emeritus status as of June 2016. The ACU board of directors is proud to introduce the university's new corporate visual identity, which was developed to better express the core values of **wellbeing**, **quality of life**, and **human values**.*

Anne Conway University (angular values):

*After ten years of excellent service, the current logo of Anne Conway University (ACU) will receive emeritus status as of June 2016. The ACU board of directors is proud to introduce the university's new corporate visual identity, which was developed to better express the core values of **academic accomplishment**, **competition**, and **prestige**.*

Martin Luther King University (complete values):

*After carefully evaluating its position within the gamut of universities worldwide, the board of Martin Luther King University (MLKU) started a rebranding process in April 2015. The new logo was designed to more strongly express the **traditional**, **mature**, and **reputable character** of the university.*

Martin Luther King University (incomplete values):

*After carefully evaluating its position within the gamut of universities worldwide, the board of Martin Luther King University (MLKU) started a rebranding process in April 2015. The new logo was designed to more strongly express the **innovative**, **modern**, and **vibrant character** of the university.*

The complete experiment together with the full descriptions and motivation texts can be found in Appendix A.

Logos and typefaces

The logos that were chosen to represent the two universities are shown in figure 1 to 4 below. As mentioned earlier, a circular and an angular logo represented *Anne Conway University*, and a logo with a complete typeface and an incomplete one represented *Martin Luther King University*.

Figure 1. Circular logo.   *Figure 2*. Angular logo.

Figure 3. Complete typeface.   *Figure 4*. Incomplete typeface.

The logos were selected through a short pre-test. Participants had to judge the logos by means of *Appreciation*, *Professionalism*, *Suitability for a university* and *Recognizability*. For the circular and angular logo additionally a best fit was explored, where participants had to rate which of the circular and angular logos best fit together. The complete and incomplete typeface logos were not assessed for best fit, because there were always pairs of complete and incomplete logos consisting of the same font, which could have influenced the rating process. The results of the pre-test can be found in Appendix B.

3.3 Instrument

The online experiment consisted of three constructs that were measured through several items. The researcher constructed all items. The constructs were named *Logo judgment*, *Circular and angular associations* and *Complete and incomplete associations*. The items of the three constructs were measured by using a 5-point Likert scale, where the participants had to state to which extent they agreed with the statements. Likert scales are a common answering scale to assess opinions and judgments and therefore suitable for the purpose of this study.

Logo judgment. The purpose of this construct was to measure the judgment of the new logo of the university. The construct consisted of a scale including six items. Factor analysis revealed a common factor, allowing the evaluation of the change of the circular and angular logos as well as the change of the complete and incomplete typeface (see Appendix C for complete factor analysis). Examples for the items were *The new logo is appealing*, *The new logo is in line with the university's positioning* and *The new logo is an improvement to the old logo*. Cronbach's alpha for the scale resulted in .85 within the context of the circular and angular logos and in .80 within the context of the complete and incomplete typefaces.

Circular and angular logo shape associations. Within this construct the associations between the logo and the characteristics were assessed. This construct consisted of a scale including six items. Three were in line with what is associated with circular shapes, while the other three matched the associations with angular shapes. The circular characteristics were *Care, Harmony* and *Warmth* and the angular characteristics were *Achievement*, *Competition* and *Strength*. Factor analysis revealed two factors for this scale and it was therefore split in two scales (see Appendix C for complete factor analysis). Each scale resulted in two values for Cronbach's alpha, because the scale was used within two different contexts. Cronbach's alpha for the circular characteristics scale resulted in .72 for the context of the old logo of the university and in .82 for the context of the new logo of the university. Cronbach's alpha for the angular characteristics scale resulted in .65 for the context of the old logo of the university and in .72 for the context of the new logo of the university.

Complete and incomplete typeface associations. Within this construct the associations between the logo and the characteristics were assessed anew. The construct consisted of a scale including six items. Three of them were in line with what is associated with complete typefaces, whereas the other three matched the associations with incomplete typefaces. The complete typeface characteristics were *Conventional*, *Traditional* and *Stable* and the incomplete typeface characteristics were *Dynamic, Innovative* and *Adaptive*. Also in this case, factor analysis revealed two factors for this scale and it was therefore split in two scales (see Appendix C for complete factor analysis). Each scale yielded two values for Cronbach's alpha, because the scale, again, was used within two different contexts. Cronbach's alpha for the complete characteristics scale resulted in .77 for the context of the old logo of the university and in .72 for the context of the new logo of the university. Cronbach's alpha for the incomplete characteristics scale resulted in .74 for the context of the old logo of the university and in .72 for the context of the new logo of the university.
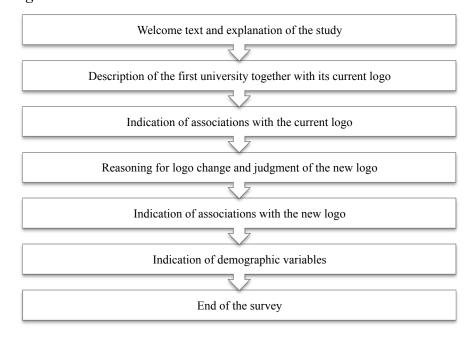
3.4 Procedure

In the first step of the experiment, the participant was shown an introductory text, where he/she was welcomed and thanked for his/her participation. Subsequently, the purpose of the experiment was described, and that it was constructed within a master's thesis at the University of Twente. It has been explained that the purpose of the experiment was the investigation of the rebranding of two universities. Furthermore, it has been explained that this rebranding was supposed to be judged by the participant. Above that, nothing was said about the associations participants needed to indicate, in order to avoid influencing the participant's choices. Moreover, the participant was informed that there were no right or wrong answers, all data would be handled anonymous and that the participant could drop out of the survey at any time. The participant was granted the possibility to ask questions to the researcher by sending an e-mail.

When the experiment started, the participants were initially confronted with the description of the first university along with its current logo. During the next step they had to judge the current logo by stating their associations with it. Thereafter, they were presented the change of the university's logo along with the reasoning of the university to do so. Participants were asked to judge the new logo using the first scale described above. Following this rating, participants needed to state their associations with the new logo. The same procedure was repeated for the second university, where the logo change was not in line with the university's description and positioning. The term "not in line" was used in this context to depict that the logo change was conducted in nonconformity with the values of the university. For example if the university stands for care and wellbeing and changes its circular logo to an angular logo, this is said "not to be in line", because angular shapes are usually not associated with these values. At the end of the experiment the participants had to fill in demographic variables, concerning their gender, age, nationality, as well as their field and current level of study. Figure 5 shows the procedure the participants had to go through with each university.

Figure 5. Procedure.

3.5 Participants

The online experiment was mainly distributed across the social media network Facebook. Facebook offers specific research groups, where students can distribute their online surveys and experiments. Data collection was performed between 4/19/2016 and 5/15/2016. All responses were collected with the software Qualtrics, which was also used for the design of the experiment.

Altogether, 171 participants took part in the experiment. They were randomly assigned to one of the previously described four conditions. Data, which was collected from 106 participants, was usable for further analysis. In order to be included in the analysis, the participants had to perform the experiment completely. Participants needed to be at least 18 years of age; otherwise a parental consent would have been necessary. They needed to be students enrolled at an institution for higher education. Students were chosen to be the target group, because they are one of the most important stakeholders and are directly in contact with a university. They might as well encounter a rebranding at their own university and would be able to judge the fit between a university's characteristics and its visual appearance. As last requirement, the participants had to be able to read and understand English texts, because the experiment was conducted in English.

The gender ration in the experiment was 55 female participants to 51 male participants. The average age was $M=24.4$ ($SD=2.70$) with a range from 19 to 36 years. The majority of the participants were German ($N=95$). The most important demographic variables can be found in table 2.

Table 2
Demographic variables of the participants.(N=106)

		N	%
Gender	Male	51	47
	Female	55	53
Nationality	German	95	89
	Dutch	5	5
	Other	6	6
Field of study	Technical/Natural sciences	25	24
	Social/Behavioral sciences	44	41
	Management/Governance	28	26
	Other	9	9
Level of study	Bachelor	54	51
	Master	44	41
	Staatsexamen	8	8

	N	Mean	SD	Min	Max
Age	106	24.4	2.70	19	36

The distribution of the participants over the four conditions can be found in table 3. Chi-square tests revealed that there were no significant differences within the conditions regarding gender [X^2(3, 106)=1.87, p=.60], nationality [X^2(6, 106)=8.87, p=.18], field of study [X^2(9, 106)=5.48, p=.79], and level of study [X^2(6, 106)=1.53, p=.96]. Analysis of variance further showed not significant differences regarding age [F(3, 106)=.78, p=.20].

Table 3

Distribution of participants over the conditions. (N=106)

		Condition 1		Condition 2		Condition 3		Condition 4	
		N	%	N	%	N	%	N	%
Gender	Male	12	40	9	45	15	50	15	58
	Female	18	60	11	55	15	50	11	42
Nationality	German	25	83	17	85	28	93	25	96
	Dutch	4	14	1	5	0	0	0	0
	Other	1	3	2	10	2	7	1	4
Field of study	Technical/ Natural sciences	7	24	6	30	7	23	5	20
	Social/ Behavioral sciences	13	43	7	35	11	37	13	50
	Management/ Governance	9	30	6	30	7	23	6	23
	Other	1	3	1	5	5	17	2	7
Level of study	Bachelor	14	47	11	55	15	50	14	54
	Master	14	47	8	40	13	43	9	35
	Staatsexamen	2	6	1	5	2	7	3	11
		M	SD	M	SD	M	SD	M	SD
Age		23.5	2.29	24.7	2.00	25	3.00	24	2.9

4. Results

Univariate analyses of variance were conducted for all measurements. First, results of the associations with the circular characteristics of the old and new logos are presented, followed by the associations of the angular characteristics with the old and new logos. Next, the judgment of the logo within the circular and angular context is presented. The second part deals with the associations with the complete and incomplete characteristics of the old and new logos, again followed by the judgment of the logo change within the complete and incomplete context.

4.1 Circular vs. angular

Old logo and circular characteristics

Analysis was carried out to explore how the circular characteristics were associated with the old logos that were presented within the context of the two universities. There was a statistically significant main effect for the logo shape [$F(1, 106)=8.88$, $p=.00$], but not for the context information about the universities [$F(1, 106)=.87$, $p=.35$]. The interaction effect [$F(1, 106)=1.40$, $p=.24$] did not reach statistical significance.

The main effect for logo shape means that there were significant differences in association effects regarding the shape of the logo, thus that either the circular or the angular shaped logo scored higher on the circular characteristics. In this case, the circular characteristics were stronger associated with the old circular logo rather than with the old angular logo. The fact that there was no main effect for the context information about the universities means that there were no significant influences of either the context of the circular university or the angular university. The context information therefore had no effect on the indication of associations with the two logos. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 4 for mean values of these findings).

Hypothesis 1a, stating that circular shaped logos will be associated more strongly with characteristics as "*Care*", "*Harmony*" and "*Warmth*" than angular shaped logos, is therefore accepted. Hypothesis 2a, stating that circular shaped logos will be associated more strongly with the characteristics mentioned above when they are presented within a context conform with these characteristics, is rejected. Even though the values for the old circular logo within the context of the circular university were higher, these values were not statistically significant, and the hypothesis must therefore be rejected.

Table 4
Associations with circular characteristics.

	Old angular logo		Old circular logo	
	M	SD	M	SD
"Angular" university	3.04	.71	3.32	.85
"Circular" university	3.00	.89	3.64	.68

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

New logo and circular characteristics

Analysis was carried out to explore how the circular characteristics were associated with the new logos that were presented within the context of the two universities. There was a statistically significant main effect for the logo shape [$F(1, 106)=76.43, p=.00$], but not for the context information about the universities [$F(1, 106)=.00, p=.99$]. The interaction effect [$F(1, 106)=.65, p=.42$] did not attain statistical significance.

The main effect for logo shape implies that there were significant differences in association effects regarding the shape of the logo, so that either the circular or the angular shaped logo scored higher on the circular characteristics. In this case, the circular characteristics were stronger associated with the new circular logo rather than with the new angular logo. The fact that there was no main effect for the context information about the universities means that there were no significant influences of either the context of the circular university or the angular university. The context information therefore had no effect on the indication of associations with the two logos. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 5 for mean values of these findings).

These findings are also related to hypothesis 1a and hypothesis 2a. Hypothesis 1a, stating that circular shaped logos will be associated more strongly with characteristics as "*Care*", "*Harmony*" and "*Warmth*" than angular shaped logos, is accepted. Hypothesis 2a, stating that circular shaped logos will be associated more strongly with the characteristics mentioned above when they are presented within a context conform with these characteristics, is rejected. As for the values of the old circular logo, the values for the new circular logo within the context of the circular university were higher. These values were statistically insignificant; therefore the hypothesis must be rejected.

Table 5
Associations with circular characteristics.

	New circular logo		New angular logo	
	M	SD	M	SD
"Angular" university	3.76	.68	2.59	1.07
"Circular" university	3.88	.60	2.64	.69

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

Old logo and angular characteristics

Analysis was carried out to explore how the angular characteristics were associated with the old logos that were presented within the context of the two universities. There was a statistically significant main effect for the logo shape [$F(1, 106)=5.27, p=.02$], and for the context information about the universities [$F(1, 106)=4.33, p=.04$]. The interaction effect [$F(1, 106)=2.69, p=.10$] did not reach statistical significance.

The main effect for logo shape implies that there were significant differences in association effects regarding the shape of the logo, so that either the circular or the angular shaped logo scored higher on the angular characteristics. In this case, the angular characteristics were stronger associated with the old circular logo rather than with the old

angular logo. The fact that there was a main effect for the context information about the universities means that there were significant influences of the context of the circular and angular university. The context information about both universities influenced the associations of the old circular logo with the angular characteristics. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 6 for mean values of these findings).

Hypothesis 1b, stating that angular shaped logos will be associated more strongly with characteristics as "*Achievement*", "*Competition*" and "*Strength* than circular shaped logos, is therefore rejected. Hypothesis 2b, stating that angular shaped logos will be associated more strongly with the characteristics mentioned above when they are presented within a context conform with these characteristics, is also rejected.

Table 6
Associations with angular characteristics.

	Old angular logo		Old circular logo	
	M	SD	M	SD
"Angular" university	3.28	.68	3.82	.60
"Circular" university	3.22	.73	3.31	.71

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

New logo and angular characteristics

Analysis was carried out to explore how the angular characteristics were associated with the new logos that were presented within the context of the two universities. There was neither a statistically significant main effect for the logo shape [$F(1, 106)=1.78$, $p=.19$], nor for the context information about the universities [$F(1, 106)=.33$, $p=.57$]. The interaction effect [$F(1, 106)=.78$, $p=.38$] did not attain statistical significance.

The absence of the main effect for logo shape denotes that there were no significant differences in association effects regarding the shape of the logo, so that neither the circular nor the angular shaped logo scored higher on the angular characteristics. In this case, the angular characteristics were stronger associated with the new circular logo than with the new angular logo, even though, these values were statistically insignificant. The fact that there was no main effect for the context information about the universities means that there were no significant influences of the context of the circular or angular university. The context information therefore had no effect on the indication of associations with the two logos. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 7 for mean values of these findings).

These findings are also related to hypothesis 1b and hypothesis 2b. Hypothesis 1b, stating that angular shaped logos will be associated more strongly with characteristics as "*Achievement*", "*Competition*" and "*Strength* than circular shaped logos, is rejected. Hypothesis 2b, stating that angular shaped logos will be associated more strongly with the characteristics named above when they are presented within a context conform with these characteristics, is also rejected.

Table 7

Associations with angular characteristics.

	New circular logo		New angular logo	
	M	SD	M	SD
"Angular" university	3.40	.76	3.02	1.14
"Circular" university	3.34	.81	3.27	.82

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

Judgment of logo change

In the experiment, it was additionally explored how the logo change of the universities was judged within its context. There was a statistically significant main effect for the logo shape [$F(1, 106)=53.56$, $p=.00$], but not for the context information about the universities [$F(1, 106)=1.92$, $p=.17$]. The interaction effect [$F(1, 106)=.12$, $p=.74$] did not reach statistical significance.

The main effect for logo shape implies that there were significant differences in evaluation regarding the shape of the logo, so that either the circular or the angular shaped logo scored higher on the judgment scale. In this case the logo change was judged more positively when the university changed its logo to a circular one. The fact that there was no main effect for the context information about the universities means that there were no significant influences of the context of the circular or angular university. The context information therefore had no effect on the judgment of the logo change. There was no interaction effect present, which means that the interaction of the two variables did not influence the judgment of the logo change (see table 8 for mean values of these findings).

Hypothesis 3a, stating that a CVI change into a circular logo will be judged more positively when it is in line with the organization's characteristics than when it is not in line, is therefore rejected. Hypothesis 3b, stating that a CVI change into an angular logo will be judged more positively when it is in line with the organization's characteristics than when it is not in line, is rejected. Neither the change into a circular logo, nor the change into an angular logo was judged more positively when it was presented within its 'native' context.

Table 8

Evaluation of the logo change.

	New circular logo		New angular logo	
	M	SD	M	SD
"Angular" university	3.80	.64	2.78	.83
"Circular" university	3.57	.63	2.64	.63

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

4.2 Complete vs. incomplete

Old logo and complete characteristics

Analysis was carried out to explore how the complete characteristics were associated with the old logos that were presented within the context of the two universities. There was a statistically significant main effect for the logo typeface [$F(1, 106)=9.37$, $p=.00$], but not for the context information about the universities [$F(1, 106)=.20$, $p=.66$]. The interaction effect [$F(1, 106)=5.70$, $p=.02$] did reach statistical significance.

The main effect for logo typeface means that there were significant differences in association effects regarding the typeface of the logo, so that either the logo with the complete or the logo with the incomplete typeface scored higher on the complete characteristics. In this case, the complete characteristics were stronger associated with the old incomplete logo than with the old complete logo. The fact that there was no main effect for the context information about the universities means that there were no significant influences of either the context of the complete university or the incomplete university. The context information therefore had no effect on the indication of associations with the two logos. The interaction effect was present, which means that the interaction of the two variables did influence the indication of associations (see table 9 for mean values of these findings).

Hypothesis 1c, stating that logos with a complete typeface will be associated more strongly with characteristics as "*Conventional*", "*Traditional*" and "*Stable*" than logos with an incomplete typeface, is rejected. Additionally hypothesis 2c, stating that logos with a complete typeface will be associated more strongly with the characteristics mentioned above when they are presented within a context conform with these characteristics, is rejected.

Table 9
Associations with complete characteristics.

	Old complete logo		Old incomplete logo	
	M	SD	M	SD
"Complete" university	3.44	.72	3.53	.58
"Incomplete" university	3.21	.63	3.87	.40

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

New logo and complete characteristics

Analysis was carried out to explore how the complete characteristics were associated with the new logos that were presented within the context of the two universities. There was a statistically significant main effect for the logo typeface [$F(1, 106)=5.85$, $p=.02$], but not for the context information about the universities [$F(1, 106)=1.69$, $p=.20$]. The interaction effect [$F(1, 106)=2.37$, $p=.13$] did not attain statistical significance.

The main effect for logo typeface means that there were significant differences in association effects regarding the typeface of the logo, so that either the logo with the complete or the logo with the incomplete typeface scored higher on the complete characteristics. In this case, the complete characteristics were stronger associated with the new incomplete logo

rather than with the new complete logo. The fact that there was no main effect for the context information about the universities means that there were no significant influences of either the context of the complete university or the incomplete university. The context information therefore had no effect on the indication of associations with the two logos. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 10 for mean values of these findings).

These findings are also related to hypotheses 1c and 2c. Hypothesis 1c, stating that logos with a complete typeface will be associated more strongly with characteristics as "*Conventional*", "*Traditional*" and "*Stable*" than logos with an incomplete typeface, is rejected. Hypothesis 2c, stating that logos with a complete typeface will be associated more strongly with the characteristics mentioned above when they are presented within a context conform with these characteristics, is also rejected.

Table 10
Associations with complete characteristics.

	New incomplete logo		New complete logo	
	M	SD	M	SD
"Complete" university	3.09	.83	2.54	.54
"Incomplete" university	3.06	.66	2.93	.76

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

Old logo and incomplete characteristics

Analysis was carried out to explore how the incomplete characteristics were associated with the old logos that were presented within the context of the two universities. There was neither a statistically significant main effect for the logo typeface [$F(1, 106)$=.71, p=.40], nor for the context information about the universities [$F(1, 106)$=2.34, p=.25]. The interaction effect [$F(1, 106)$=.15, p=.70] did not reach statistical significance.

The absence of the main effect for logo typeface implies that there were no significant differences in association effects regarding the typeface of the logo, so that neither the logo with the complete typeface nor the one with the incomplete typeface scored higher on the incomplete characteristics. In this case, the incomplete characteristics were stronger associated with the old complete logo than with the old incomplete logo; although these values were not statistically significant. The fact that there was no main effect for the context information about the universities means that there were no significant influences of the context of the complete or incomplete university. The context information therefore had no effect on the indication of associations with the two logos. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 11 for mean values of these findings).

Hypothesis 1d, stating that logos with an incomplete typeface will be associated more strongly with characteristics as "*Dynamic*", "*Creative*" and "*Adaptive*" than logos with a complete typeface, is therefore rejected. Hypothesis 2d, stating that logos with an incomplete typeface will be associated more strongly with the characteristics named above when they are presented within a context conform with these characteristics, is rejected, too.

Table 11

Associations with incomplete characteristics.

	Old complete logo		Old incomplete logo	
	M	SD	M	SD
"Complete" university	2.83	.68	2.64	.74
"Incomplete" university	3.20	.59	2.88	.71

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

New logo and incomplete characteristics

Analysis was carried out to explore how the incomplete characteristics were associated with the new logos that were presented within the context of the two universities. There was a statistically significant main effect for the logo typeface [$F(1, 106)=4.23, p=.04$], but not for the context information about the universities [$F(1, 106)=2.52, p=.12$]. The interaction effect [$F(1, 106)=.35, p=.56$] did not attain statistical significance.

The main effect for logo typeface means that there were significant differences in association effects regarding the typeface of the logo, so that either the logo with the complete or the logo with the incomplete typeface scored higher on the complete characteristics. In this case, the incomplete characteristics were stronger associated with the new complete logo than with the new incomplete logo. The fact that there was no main effect for the context information about the universities means that there were no significant influences of either the context of the complete university or the incomplete university. The context information therefore had no effect on the indication of associations with the two logos. There was no interaction effect present, which means that the interaction of the two variables did not influence the indication of associations (see table 12 for mean values of these findings).

These results are also related to hypotheses 1d and 2d. Hypothesis 1d, stating that logos with an incomplete typeface will be associated more strongly with characteristics as "*Dynamic*", "*Creative*" and "*Adaptive*" than logos with a complete typeface, is therefore rejected. Hypothesis 2d, stating that logos with an incomplete typeface will be associated more strongly with the characteristics named above when they are presented within a context conform with these characteristics, is also rejected.

Table 12

Associations with incomplete characteristics.

	New incomplete logo		New complete logo	
	M	SD	M	SD
"Complete" university	2.88	.74	3.27	.64
"Incomplete" university	3.20	.70	3.42	.95

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

Judgment of logo change

In the next step it was explored how the logo change of the universities was judged within its context. There was neither a statistically significant main effect for the logo typeface [$F(1,$

106)=.35, *p*=.55], nor for the context information about the universities [*F*(1, 106)=1.87, *p*=.18]. The interaction effect [*F*(1, 106)=.34, *p*=.85] did not attain statistical significance.

The absence of the main effect for logo shape means that there were no significant differences in evaluation regarding the typeface of the logo, so that neither the logo with the complete typeface nor the logo with the incomplete typeface scored higher on the judgment scale. In this case the logo change was judged more positively when the university changed its logo to a complete logo; although, these values were not significant. The fact that there was no main effect for the context information about the universities means that there were no significant influences of the context of the complete or incomplete university. The context information therefore had no effect on the judgment of the logo change. There was no interaction effect present, which means that the interaction of the two variables did not influence the judgment of the logo change (see table 13 for mean values of these findings).

Hypothesis 3c, stating that a CVI change into a logo with a complete typeface will be judged more positively when it is in line with the organization's characteristics than when it is not in line, is therefore rejected. Hypothesis 3d, stating that a CVI change into a logo with an incomplete typeface will be judged more positively when it is in line with the organization's characteristics than when it is not in line, is also rejected. Neither the change into a logo with a complete typeface, nor the change into a logo with an incomplete typeface was judged more positively when it was presented within its 'native' context.

Table 13
Evaluation of the logo change.

	New incomplete logo		New complete logo	
	M	SD	M	SD
"Complete" university	2.98	.68	3.09	.79
"Incomplete" university	3.20	1.59	3.20	.89

Note. Variables measured with Likert scale 1 – 5 (Strongly disagree – strongly agree).

4.3 Comparison between the conditions

Old circular and angular logo

The old logos represented the new logos within another condition and therefore were set into a different context.

The old circular logo was always associated stronger with both the circular and the angular characteristics than the angular logo. This additionally always occurred within the fitting context. That means where the context of the circular university was given the logo was stronger associated with the circular characteristics and where the context of the angular university was given the logo was stronger associated with the angular characteristics. It seems likely that the circular logo was adapting to whatever context it was set into. What is prominent in the case of the new circular logo, is that it is much stronger associated with both types of characteristics than the angular logo. The opposite is the case for the old angular logo. It was in general weaker associated with both the characteristics, but in case where it represented the new logo, the difference was more obvious.

Old complete and incomplete logo

The complete and incomplete logos in general were associated stronger with the "opposite" characteristics. The context situation here was actually different to the one of the circular and angular logos. The old complete logo was associated stronger with the incomplete characteristics within the context of the incomplete university; the same held true for the situation where it represented the new complete logo. The old incomplete logo was associated stronger with the complete characteristics, within the context of the incomplete university. When it represented the new incomplete logo, it was, again, stronger associated with the complete characteristics, this time within the context of the complete university.

The difference of the association effect between the complete and incomplete logos can be described as having a minor magnitude. However, in the case where the old logos became the new logos, the difference between the values became larger, which was remarkable.

5. Discussion

In the following section an answer to the research question will be given. Limitations regarding the research and its process will be discussed and recommendations for further research will be stated. Finally, practical implications will be presented.

5.1 Conclusion and reflection of literature

It can be said that the conducted study provided new findings that do not confirm earlier research. Circular logos were not only associated with circular characteristics, but also with angular characteristics. In comparison to that, angular logos were associated very weakly with these characteristics. Complete and incomplete logos were associated strongly with the "opposite" characteristics. The context information about the universities rarely played a role and most of the time did not influence the findings. In the case of the judgment process of the new logos of the universities, the context information did not have any influence.

  Within this study, the circular shaped logo was associated with characteristics as *Care*, *Harmony* and *Warmth*. Data that substantiates these observations can be found in literature that states circular shapes are associated with soft and balanced characteristics (Jian, Gorn, Galli & Chattopadhyay, 2015; Adîr, Adîr & Pascu, 2012) and are associated with words such as 'good' or 'beautiful' (Henderson, Cote, Leong, & Schmitt, 2003). Similarly, the circular logo can be associated with Henderson and Cote's (1998) abstract characteristic 'Harmony', which supports the balanced characteristics. However, the circular shaped logo was also associated with characteristics that according to earlier research are more often associated with angular shapes. These characteristics are powerful ones, such as *Achievement* or *Competition*. The logo is also three-dimensional, which is complex according to Henderson and Cote (1998). Complex designs are not associated with soft and balanced characteristics, which might explain these findings. This is a novel observation, which contradicts previous studies.

  In the case of the angular shaped logo the results are barely supported by earlier research. The angular shaped logo has only very weakly been associated with the angular characteristics, while the circular one scored higher on these characteristics. Earlier research indicated that angular shapes are associated with *Hardness* and *Power* (Jian, Gorn, Galli & Chattopadhyay, 2015), as well as with *Conflict* (Henderson, Cote, Leong, & Schmitt, 2003). These characteristics are similar to the ones used in this study (*Achievement, Competition, Strength*). The angular logo might have been associated with Henderson and Cote's (1998) 'Harmony' as well, because its three-dimensional feature provides symmetry and balance, which might explain why it was not associated with the angular characteristics.

  The logo with a complete typeface was more often associated with characteristics that according to earlier research (Hagtvedt, 2011) were more strongly associated with logos that have an incomplete typeface. These characteristics symbolize innovative and modern traits like *Dynamic*, *Innovative* and *Adaptive*. These finding contrasts earlier research, which states that logos with complete typefaces are associated with characteristics such as *Trustworthiness* (Cian, Krishna & Elder, 2014).

The logo with an incomplete typeface was more often associated with characteristics as *Traditional*, *Conventional* and *Stable*. These characteristics are similar to the ones, which were, in previous studies, associated with complete typefaces (Cian, Krishna & Elder, 2014). Logos with incomplete typefaces have mostly been associated with more innovative characteristics in the past (Hagtvedt, 2011), which proves the prevailing findings of this survey being novel.

The context information about the university had only influence on the associations in two cases. In the first case, the context information about the circular university as well as the angular university influenced the associations with the old circular logo. Although the influence was not statistically significant, it led to the assumption that within both contexts the circular logo was stronger associated with the angular characteristics. As a result, this observation did not strengthen the expectations that within the context of the circular university the circular logo would be more associated with the circular characteristics than with the angular characteristics.

In the second case, only the interaction between the context information and the typeface influenced the associations. The old logo with the incomplete typeface was stronger associated with the complete characteristics in both the context of the complete university and the incomplete university. This did not strengthen the expectations that within the context of the incomplete university the logo with the incomplete typeface would be more associated with the incomplete characteristics than with the complete characteristics.

In the cases of the logo change of the university, the context information did not have an overall effect. The logo change was judged more positively when the university changed its logo from an angular to a circular one, no matter what the context information was. This means even if the description of the university was more "angular directed", the circular logo was judged more positively. The same held true for the logo change of the logos with a complete and incomplete typeface. The logo change was judged more positively when the university changed its logo from an incomplete to a complete logo, again, no matter what the context information was. Even though the description of the university was more "incomplete directed", the complete logo was judged more positively. Although the statistical values of these findings were not significant, they are worth mentioning.

These conclusions also refer to the hypotheses that have been stated earlier. For clarification purposes, table 14 provides an overview of the acceptation or rejection of the hypotheses. In general this study showed that the influence of corporate logos is more complex than it was expected. The actual information that logos communicate is less predictable. It seems that logos communicate something else than what they are intended to do. Additionally they communicate something independently from the organization they represent. To answer the research question it can be stated that the assimilation effect between an organization's characteristics and the new logo is barely present and can even be directed in the wrong direction. Furthermore, logo characteristics are not stable within a context that is in line with these characteristics. In the majority of the cases, the logos were not associated with the expected characteristics.

Table 14

Verification of hypotheses.

Hypothesis	Accepted/Rejected
1a: *Circular shaped logos will be associated more strongly with characteristics as "Care", "Harmony" and "Warmth" than angular shaped logos.*	Accepted
1b: *Angular shaped logos will be associated more strongly with characteristics as "Achievement", "Competition" and "Strength than circular shaped logos.*	Rejected
1c: *Logos with a complete typeface will be associated more strongly with characteristics as "Conventional", "Traditional" and "Stable" than logos with an incomplete typeface.*	Rejected
1d: *Logos with an incomplete typeface will be associated more strongly with characteristics as "Dynamic", "Creative" and "Adaptive" than logos with a complete typeface.*	Rejected
2a: *Circular shaped logos will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*	Rejected
2b: *Angular shaped logos will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*	Rejected
2c: *Logos with a complete typeface will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*	Rejected
2d: *Logos with an incomplete typeface will be associated more strongly with the characteristics named above when they are presented within a context that conforms these characteristics.*	Rejected
3a: *A CVI change into a circular logo will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*	Rejected
3b: *A CVI change into an angular logo will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*	Rejected
3c: *A CVI change into a logo with a complete typeface will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*	Rejected
3d: *A CVI change into a logo with an incomplete typeface will be judged more positively when it is in line with the organization's characteristics than when it is not in line.*	Rejected

5.2 Limitations and further research

The desired number of participants was about 120, so that approximately 30 participants could provide answer to each of the four conditions. However, the fact that some of the participants did not finish the online experiment, resulted in several incompletely filled out questionnaires. The final number of participants was 106, which limited the generalizability of the results. Future research should try to address a larger amount of participants, and additionally including more nationalities, as the present experiment was primarily completed by German participants.

Another limitation involves the execution of the pre-test. The pre-test only tested the logos on *Appreciation*, *Professionalism*, *Suitability for a university* and *Recognizability*. The logos were not tested on the characteristics that were used in the experiment later, which seems to be responsible for the results that the logos were not all associated with these characteristics. The circular and angular logos that were tested within the pre-test were all more or less three-dimensional, which might have had an influence on the indication of associations. They were only selected on basis of their shape. This needs to be elaborated in further research. Additionally, both the circular and angular logo that were finally chosen for the experiment had an inner element, which made them look like as if they were protecting something. This could have also influenced the indications of associations. The logos with the complete and incomplete typeface were created with a design program. They had no specific requirements except for the abbreviations of the university's name. It might be of interest that the utilized fonts were chosen randomly. Research that connects different fonts with different characteristics can be taken into account for future research. Further research should take into account a pre-test that examines already existing associations with the logos that are at choice and additionally could use different logos.

Further, there were some limitations regarding the research instrument. The researcher constructed all the scales used within this study. The values for Cronbach's alphas for the characteristics scales ranged from sufficient to very good. Although, other characteristics could evoke different responses and results. Future studies should try to address this by using a greater amount of characteristics that are still synonymous. The judgment scale was reliable but other statements could be used for further research to facilitate a more narrow judgment of the new logos.

The last limitation concerns the research methodology and design. The online experiment was a short-time study. The disadvantage of this type of approach was that the participants evaluated and judged the logo change of the organizations at one time in one session. A long-time study might have the advantage of letting the participants first get to know the organization with all its aspects. Further research could use interviews to get a more detailed picture of the thoughts of the participants about the organization and its logo. It could introduce the change of the logo after a longer period of time when the participants are already familiar with the organization. This might lead to a more detailed judgment and participants could describe their thoughts with the change more thoroughly.

5.3 Practical implications

There are a few implications arising from the results of this study. Before changing their CVI, organizations should carefully evaluate what they stand for. They need to match their inner values with their visual appearance to make the right choices for their CVI. The current research shows that this matching might be difficult, because people have different associations with different logos or organizations. An interesting fact arising from these results is that circular logos, according to the current research, are of value for organizations that stand for characteristics as *Strength*, *Competition* and *Achievement*, because the circular logo was, within this research, associated with such characteristics. This finding might have resulted from the fact that the circular logo used in the experiment was three-dimensional with an inner element, which seemed to be protected by the outer element. As already mentioned in the section *Limitations* this might have influenced the associations with this logo. A logo that looks like as it were protecting something can very well be associated with characteristics as *Strength*, *Competition* or *Achievement* besides characteristics such as *Care* or *Well-being*. Up to today, these insights were not identified by earlier studies and leaves possibilities for organizations to implement them into their overall marketing strategy.

  The problem described above requires further attention. This research showed that the context information about an organization did not play a role in the evaluation and judgment of the new logo of the organization. The characteristics, positioning and values of the organization, became not obvious to the participants or at least they not have includde them into their judgment. If an organization changes its CVI it should be aware of communicating this to internal as well as external stakeholders. It should communicate the change and clarify the overall meaning and reasoning. An organization could pre-test its CVI change among their employees and customers so that its logo - without doubts - communicates what the organization stands for.

References

Adams, A., & Bond, S. (2000). Hospital nurses' job satisfaction, individual and organizational characteristics. *Journal of Advanced Nursing*, *32*(3), 536-543.

Adîr, G., Adî R. V., & Pascu, N. E. (2012). Logo design and the corporate identity. *Social and Behavioral Sciences*, *51*, 650-654.

Balmer, J.M.T. (2010). Explicating corporate brands and their management: Reflections and directions from 1995. *Journal of Brand Management*, *18*, 180–196.

Berlyne, Daniel E. (1971). Aesthetics and psychobiology. NY: Meredith Corporation.

Bolhuis, W., de Jong, M. D., & van den Bosch, A. L. (2015). Corporate rebranding: Effects of corporate visual identity changes on employees and consumers. *Journal of marketing communications*, 1-14.

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love and outgroup hate?. *Journal of Social Issues*, *55*(3), 429-444.

Childers, T. L. & Jass, J. (2002). All dressed up with something to say: Effects of typeface semantic associations on brand perceptions and consumer memory. *Journal of Consumer Psychology*, *12* (2), 93–106.

Cian, L., Krishna, A., & Elder, R. S. (2014). This logo moves me: Dynamic imagery from static images. *Journal of Marketing Research*, *51*(2), 184-197.

Collange, V., & Bonache, A. (2015). Overcoming resistance to product rebranding. *Journal of Product & Brand Management*, *24*(6), 621-632.

Foroudi, P., Melewar, T. C., & Gupta, S. (2014). Linking corporate logo, corporate image, and reputation: An examination of consumer perceptions in the financial setting. *Journal of Business Research*, *67*(11), 2269-2281.

Graser, U. (2000). Design and tests of the midi detector subsystem. *Astronomical Telescopes and Instrumentation*, *4006,* 136-146).

Grohmann, B., Giese, J. L., & Parkman, I. D. (2013). Using type font characteristics to communicate brand personality of new brands. *Journal of Brand Management*, *20*(5), 389-403.

Hagtvedt, H. (2011). The impact of incomplete typeface logos on perceptions of the firm. *Journal of Marketing*, *75*(4), 86-93.

Henderson, P. W., & Cote, J. A. (1998). Guidelines for selecting or modifying logos. *The Journal of Marketing*, *62*(2) 14-30.

Henderson, P. W., Cote, J. A., Leong, S. M., & Schmitt, B. (2003). Building strong brands in Asia: Selecting the visual components of image to maximize brand strength. *International Journal of Research in Marketing*, *20*(4), 297-313.

Henderson, P. W., Giese, J. L., & Cote, J. A. (2004). Impression management using typeface design. *Journal of Marketing*, *68*(4), 60-72.

Hirschman, E. C. (1980), Innovativeness, novelty seeking, and consumer creativity. *Journal of Consumer Research*, *7* (3), 283–95.

Ing, G. P. (2012). Corporate rebranding and the effects on consumers' attitude structure. *International Journal of Business and Society*, *13*(3), 255.

Jiang, Y., Gorn, G. J., Galli, M., & Chattopadhyay, A. (2015). Does Your Company Have the Right Logo? How and Why Circular-and Angular-Logo Shapes Influence Brand Attribute Judgments. *Journal of Consumer Research*, 1-18.

Jung, C. G. (1995). Über die Psychologie des Unbewussten (1943). *Gesammelte Werke*, *7*, 1-130.

Melewar, T. C., & Akel, S. (2005). The role of corporate identity in the higher education sector: A case study. *Corporate Communications: An International Journal*, *10*(1), 41-57.

Melewar, T. C., Hussey, G., & Srivoravilai, N. (2005). Corporate visual identity: The rebranding of France Télécom. *The Journal of Brand Management*, *12*(5), 379-394.

Müller, B., Kocher, B., & Crettaz, A. (2013). The effects of visual rejuvenation through brand logos. *Journal of Business Research*, *66*(1), 82-88.

Park, C. W., Eisingerich, A. B., Pol, G., & Park, J. W. (2013). The role of brand logos in firm performance. *Journal of Business Research*, *66*(2), 180-187.

Rudmin, F. W. (2003). Critical history of the acculturation psychology of assimilation, separation, integration, and marginalization. *Review of General Psychology*, *7*(1), 3.

Scheerer, E. (1980). Wilhelm Wundt's psychology of memory. *Psychological Research*, *42*(1-2), 135-155.

Stuart, H., & Muzellec, L. (2004). Corporate makeovers: Can a hyena be rebranded?. *The Journal of Brand Management*, *11*(6), 472-482.

Thong, J. Y., & Yap, C. S. (1995). CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega*, *23*(4), 429-442.

Van den Bergh, O., & Vrana S. R. (1998). Repetition and boredom in a perceptual fluency: Attributional model of affective judgment. *Cognition and Emotion*, *12* (4), 533–53.

Van den Bosch, A. L., De Jong, M. D. T., & Elving, W. J. (2004). Managing corporate visual identity: Use and effects of organizational measures to support a consistent self-presentation. *Public Relations Review*, *30*(2), 225-234.

Van den Bosch, A. L., De Jong, M. D. T., & Elving, W. J. (2005). How corporate visual identity supports reputation. *Corporate Communications: An International Journal*, *10*(2), 108-116.

Van den Bosch, A. L., Elving, W. J., & de Jong, M. D. T. (2006). The impact of organisational characteristics on corporate visual identity. *European Journal of Marketing*, *40*(7/8), 870-885.

Van Riel, C. B., & van den Ban, A. (2001). The added value of corporate logos: An empirical study. *European Journal of Marketing*, *35*(3/4), 428-440.

Van Riel, C. B., & van Hasselt, J. J. (2002). Conversion of organizational research findings into action. *Corporate and Organizational Identities*, *15*, 156-174.

Walsh, M. F., Page Winterich, K., & Mittal, V. (2010). Do logo redesigns help or hurt your brand? The role of brand commitment. *Journal of Product & Brand Management*, *19*(2), 76-84.

Wedell, D. H., Parducci, A., & Geiselman, R. E. (1987). A formal analysis of ratings of physical attractiveness: Successive contrast and simultaneous assimilation. *Journal of Experimental Social Psychology*, *23*(3), 230-249.

Witz, A., Warhurst, C., & Nickson, D. (2003). The labour of aesthetics and the aesthetics of organization. *Organization*, *10*(1), 33-54.

Appendix A – Experiment

Dear participant,

Thanks so much for your willingness to participate in my study. For my Master's thesis Communication Studies at the University of Twente, I am working on a study about the rebranding of two American universities. You will judge the rebrandings of both universities. The complete survey will approximately take 15 minutes of your time. It is very important for the research that you carefully read the information about the universities and that you take a good look at their logos.

I would like to stress that there are no right and wrong answers. All questions are about your personal opinions and should solely reflect what you think. All data will be treated confidentially, and the results will be anonymous.

I want you to know that participation is voluntary, and that you can stop at any time. If you are so kind to fill out the complete survey, I would like to ask you to do so in one session (otherwise the time between reading the texts or seeing the logos and answering the questions may be too long).

If you have any questions about the research, you may contact me at l.grunwald@student.utwente.nl.

Thanks again for your participation!

Lisa Grunwald

-Condition 1-

The first rebranding is that of Anne Conway University (ACU). You will first get a general description of the university, together with its current logo:

Anne Conway University (ACU) was founded in 1960. Ever since its foundation, ACU has focused on quality of life as main focus in teaching and research. ACU has two schools: the Medical School, and the School of Social Sciences and Humanities.

The research programs of ACU involve the connection between healthcare, social sciences, and humanities. Our research projects focus predominantly on issues of care, safety, and wellbeing, both in healthcare settings and in daily life. Making substantial contributions to the quality of care and the quality of life is our first aim in our research projects, which we try to combine with publications in peer-reviewed academic journals.

Anne Conway University

ACU practices what it preaches in its educational programs. Well-being and personal development of students are at the heart of our graduate and undergraduate programs. Our high-quality teaching programs are supported by an excellent system of tutoring, supporting students in their study progress as well as in life-related issues. The ACU campus offers a safe and inviting living community, affordable housing, and many opportunities for leisure activities.

Which associations do you have with the current logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	❍	❍	❍	❍	❍
Achievement	❍	❍	❍	❍	❍
Harmony	❍	❍	❍	❍	❍
Competition	❍	❍	❍	❍	❍
Warmth	❍	❍	❍	❍	❍
Strength	❍	❍	❍	❍	❍

After ten years of excellent service, the current logo of Anne Conway University (ACU) will receive emeritus status as of June 2016. On June 1, ACU's new logo will be launched. The logo is the result of a thorough redesign process, directed by Vision&Design Consultancy. In the process, students, faculty, staff members, and various external stakeholders were consulted. The ACU board of directors is proud to introduce the university's new corporate visual identity, which was developed to better express the core values of wellbeing, quality of life, and human values.

Current logo   *New logo*

Please indicate to what extent you agree with the following statements:
The new logo is...

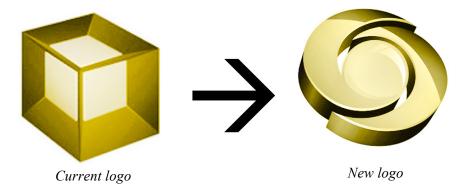|	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	❍	❍	❍	❍	❍
Distinctive	❍	❍	❍	❍	❍
Recognizable	❍	❍	❍	❍	❍
Fitting the university's core values	❍	❍	❍	❍	❍
In line with the university's positioning	❍	❍	❍	❍	❍
An improvement to the old logo	❍	❍	❍	❍	❍

Which associations do you have with the new logo of the Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	○	○	○	○	○
Achievement	○	○	○	○	○
Harmony	○	○	○	○	○
Competition	○	○	○	○	○
Warmth	○	○	○	○	○
Strength	○	○	○	○	○

The design agency also created an alternative logo for Anne Conway University, which was not selected. Which associations do you have with this logo?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	○	○	○	○	○
Achievement	○	○	○	○	○
Harmony	○	○	○	○	○
Competition	○	○	○	○	○
Warmth	○	○	○	○	○
Strength	○	○	○	○	○

The second rebranding is that of Martin Luther King University (MLKU). You will again get a general description of the university, together with its current logo:

Martin Luther King University (MLKU) is an established university comprising a broad range of academic disciplines, varying from science to humanities and arts. Founded in 1920, the university has become one of the main comprehensive universities in the country, with a solid academic reputation.

In research, MLKU strives to excel in all of its disciplines, with a strong emphasis on fundamental research. Academic progress can only be reached by substantial programs of first-rate researchers, who autonomously develop their lines of research. MLKU provides researchers in all disciplines and a stable context to perform.

The educational programs of MLKU are characterized by a constant high quality. MLKU constantly monitors the quality of all programs, at the program level, at the level of lectures, seminars, and practicas, and at the level of assessment. Only the best and most reputable professors are involved in MLKU's teaching. Without exception, our graduate and undergraduate programs are among the highest-ranked programs in the country.

Martin Luther King University

Which associations do you have with the current logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

After carefully evaluating its position within the gamut of universities worldwide, the board of Martin Luther King University (MLKU) started a rebranding process in April 2015. In close collaboration with the Warwick Consultancy Group and G&A Design, MLKU's positioning and visual identity were assessed. Representatives of all (internal and external) stakeholders were involved in the process. The main conclusion was that the university's core values are still relevant and viable, but that the visual identity needed an update to better express these values. The process resulted in a new visual identity, which will officially be launched in May 2016. The new logo was designed to more strongly express the traditional, mature, and reputable character of the university.

Current logo → *New logo*

Please indicate to what extent you agree with the following statements:
The new logo is...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	❍	❍	❍	❍	❍
Distinctive	❍	❍	❍	❍	❍
Recognizable	❍	❍	❍	❍	❍
Fitting the university's core values	❍	❍	❍	❍	❍
In line with the university's positioning	❍	❍	❍	❍	❍
An improvement to the old logo	❍	❍	❍	❍	❍

Which associations do you have with the new logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

The design agency also created an alternative logo for Martin Luther King University, which was not selected. Which associations do you have with this logo?
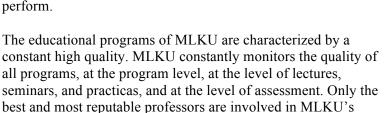

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	○	○	○	○	○
Conventional	○	○	○	○	○
Creative	○	○	○	○	○
Traditional	○	○	○	○	○
Adaptive	○	○	○	○	○
Stable	○	○	○	○	○

-Condition 2-

The first rebranding is that of Anne Conway University (ACU). You will first get a general description of the university, together with its current logo:

Anne Conway University (ACU) was founded in 1960. Ever since its foundation, ACU has successfully worked on a stellar academic reputation, in teaching as well as in research. ACU has two schools: the Medical School, and the School of Business and Economics.

Anne Conway University

The research programs of ACU focus strongly on the connection between healthcare, business, and economics. Our research projects focus predominantly on issues of efficiency, effectiveness, and management in healthcare settings. Our research is published in the highest-ranked academic outlets, and our scholars invariably have an impressive track record of awards and prestigious grants.

The graduate and undergraduate teaching programs at ACU encourage students to get the best out of themselves. In a highly competitive environment, they are offered an optimal blend of lectures, study groups, projects, and self-study. Their progress is monitored by an excellent system of tutoring. Students with outstanding achievements are given the opportunity to apply for a PhD scholarship. The ACU campus offers a wide variety of housing possibilities.

Which associations do you have with the current logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	○	○	○	○	○
Achievement	○	○	○	○	○
Harmony	○	○	○	○	○
Competition	○	○	○	○	○
Warmth	○	○	○	○	○
Strength	○	○	○	○	○

After ten years of excellent service, the current logo of Anne Conway University (ACU) will receive emeritus status as of June 2016. On June 1, ACU's new logo will be launched. The logo is the result of a thorough redesign process, directed by Vision&Design Consultancy. In the process, students, faculty, staff members, and various external stakeholders were consulted. The ACU board of directors is proud to introduce the university's new corporate visual identity, which was developed to better express the core values of academic accomplishment, competition, and prestige.

Current logo

New logo

Please indicate to what extent you agree with the following statements:
The new logo is...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	○	○	○	○	○
Distinctive	○	○	○	○	○
Recognizable	○	○	○	○	○
Fitting the university's core values	○	○	○	○	○
In line with the university's positioning	○	○	○	○	○
An improvement to the old logo	○	○	○	○	○

Which associations do you have with the new logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	❍	❍	❍	❍	❍
Achievement	❍	❍	❍	❍	❍
Harmony	❍	❍	❍	❍	❍
Competition	❍	❍	❍	❍	❍
Warmth	❍	❍	❍	❍	❍
Strength	❍	❍	❍	❍	❍

The design agency also created an alternative logo for Anne Conway University, which was not selected. Which associations do you have with this logo?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	❍	❍	❍	❍	❍
Achievement	❍	❍	❍	❍	❍
Harmony	❍	❍	❍	❍	❍
Competition	❍	❍	❍	❍	❍
Warmth	❍	❍	❍	❍	❍
Strength	❍	❍	❍	❍	❍

The second rebranding is that of Martin Luther King University (MLKU). You will again get a general description of the university, together with its current logo:

Martin Luther King University (MLKU) is a young and innovative university with a clear focus on current societal issues, nontraditional teaching methods, multi-disciplinary research, and intensive collaborations with external parties. Founded in 1950, the university has always been known for its dynamism and pioneering mentality.

Modern academic research can no longer be defined along the lines of traditional disciplines. MLKU's research reputation is based on its ability to connect between the various disciplines and establish truly interdisciplinary research teams that are fully equipped to face the important societal challenges. MLKU is also known for its good collaboration with societal partners, such as governments, NGOs, and enterprises.

The educational programs of the MLKU are entirely student-centered. Instead of clearly demarcated courses and an emphasis on lectures and exams, MLKU has adopted a blended teaching philosophy, with socially relevant projects as the core, and student-directed learning and supervised self-management as main ingredients. Without exception, our graduate and undergraduate programs are among the highest-ranked programs in the country.

Martin Luther King University

Which associations do you have with the current logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	○	○	○	○	○
Conventional	○	○	○	○	○
Creative	○	○	○	○	○
Traditional	○	○	○	○	○
Adaptive	○	○	○	○	○
Stable	○	○	○	○	○

After carefully evaluating its position within the gamut of universities worldwide, the board of Martin Luther King University (MLKU) started a rebranding process in April 2015. In close collaboration with the Warwick Consultancy Group and G&A Design, MLKU's positioning and visual identity were assessed. Representatives of all (internal and external) stakeholders were involved in the process. The main conclusion was that the university's core values are still relevant and viable, but that the visual identity needed an update to better express these values. The process resulted in a new visual identity, which will officially be launched in May 2016. The new logo was designed to more strongly express the innovative, modern, and vibrant character of the university.

Current logo → *New logo*

Please indicate to what extent you agree with the following statements.
The new logo is...

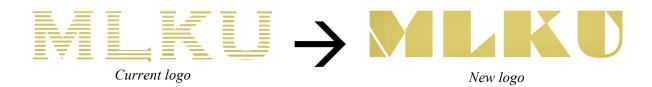|	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	❍	❍	❍	❍	❍
Distinctive	❍	❍	❍	❍	❍
Recognizable	❍	❍	❍	❍	❍
Fitting the university's core values	❍	❍	❍	❍	❍
In line with the university's positioning	❍	❍	❍	❍	❍
An improvement to the old logo	❍	❍	❍	❍	❍

Which associations do you have with the new logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

The design agency also created an alternative logo for Martin Luther King University, which was not selected. Which associations do you have with this logo?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

-Condition 3-

The second rebranding is that of Martin Luther King University (MLKU). You will again get a general description of the university, together with its current logo:

Martin Luther King University (MLKU) is a young and innovative university with a clear focus on current societal issues, nontraditional teaching methods, multi-disciplinary research, and intensive collaborations with external parties. Founded in 1950, the university has always been known for its dynamism and pioneering mentality.

Martin Luther King University

Modern academic research can no longer be defined along the lines of traditional disciplines. MLKU's research reputation is based on its ability to connect between the various disciplines and establish truly interdisciplinary research teams that are fully equipped to face the important societal challenges. MLKU is also known for its good collaboration with societal partners, such as governments, NGOs, and enterprises.

The educational programs of the MLKU are entirely student-centered. Instead of clearly demarcated courses and an emphasis on lectures and exams, MLKU has adopted a blended teaching philosophy, with socially relevant projects as the core, and student-directed learning and supervised self-management as main ingredients. Without exception, our graduate and undergraduate programs are among the highest-ranked programs in the country.

Which associations do you have with the current logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	○	○	○	○	○
Conventional	○	○	○	○	○
Creative	○	○	○	○	○
Traditional	○	○	○	○	○
Adaptive	○	○	○	○	○
Stable	○	○	○	○	○

After carefully evaluating its position within the gamut of universities worldwide, the board of Martin Luther King University (MLKU) started a rebranding process in April 2015. In close collaboration with the Warwick Consultancy Group and G&A Design, MLKU's positioning and visual identity were assessed. Representatives of all (internal and external) stakeholders were involved in the process. The main conclusion was that the university's core values are still relevant and viable, but that the visual identity needed an update to better express these values. The process resulted in a new visual identity, which will officially be launched in May 2016. The new logo was designed to more strongly express the innovative, modern, and vibrant character of the university.

Current logo → *New logo*

Please indicate to what extent you agree with the following statements.
The new logo is...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	○	○	○	○	○
Distinctive	○	○	○	○	○
Recognizable	○	○	○	○	○
Fitting the university's core values	○	○	○	○	○
In line with the university's positioning	○	○	○	○	○
An improvement to the old logo	○	○	○	○	○

Which associations do you have with the new logo of Martin Luther King University?

MLKU

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

The design agency also created an alternative logo for Martin Luther King University, which was not selected. Which associations do you have with this logo?

MLKU

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

The second rebranding is that of Anne Conway University (ACU). You will again get a general description of the university, together with its current logo:

Anne Conway University (ACU) was founded in 1960. Ever since its foundation, ACU has focused on quality of life as main focus in teaching and research. ACU has two schools: the Medical School, and the School of Social Sciences and Humanities.

The research programs of ACU involve the connection between healthcare, social sciences, and humanities. Our research projects focus predominantly on issues of care, safety, and wellbeing, both in healthcare settings and in daily life. Making substantial contributions to the quality of care and the quality of life is our first aim in our research projects, which we try to combine with publications in peer-reviewed academic journals.

Anne Conway University

 ACU practices what it preaches in its educational programs. Well-being and personal development of students are at the heart of our graduate and undergraduate programs. Our high-quality teaching programs are supported by an excellent system of tutoring, supporting students in their study progress as well as in life-related issues. The ACU campus offers a safe and inviting living community, affordable housing, and many opportunities for leisure activities

Which associations do you have with the current logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	○	○	○	○	○
Achievement	○	○	○	○	○
Harmony	○	○	○	○	○
Competition	○	○	○	○	○
Warmth	○	○	○	○	○
Strength	○	○	○	○	○

After ten years of excellent service, the current logo of Anne Conway University (ACU) will receive emeritus status as of June 2016. On June 1, ACU's new logo will be launched. The logo is the result of a thorough redesign process, directed by Vision&Design Consultancy. In the process, students, faculty, staff members, and various external stakeholders were consulted. The ACU board of directors is proud to introduce the university's new corporate visual identity, which was developed to better express the core values of wellbeing, quality of life, and human values.

Current logo

New logo

Please indicate to what extent you agree with the following statements?
The new logo is...

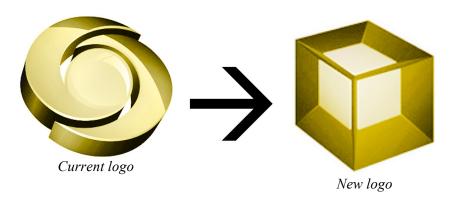|	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	❍	❍	❍	❍	❍
Distinctive	❍	❍	❍	❍	❍
Recognizable	❍	❍	❍	❍	❍
Fitting the university's core values	❍	❍	❍	❍	❍
In line with the university's positioning	❍	❍	❍	❍	❍
An improvement to the old logo	❍	❍	❍	❍	❍

Which associations do you have with the new logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	❍	❍	❍	❍	❍
Achievement	❍	❍	❍	❍	❍
Harmony	❍	❍	❍	❍	❍
Competition	❍	❍	❍	❍	❍
Warmth	❍	❍	❍	❍	❍
Strength	❍	❍	❍	❍	❍

The design agency also created an alternative logo for Anne Conway University, which was not selected. Which associations do you have with this logo?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	❍	❍	❍	❍	❍
Achievement	❍	❍	❍	❍	❍
Harmony	❍	❍	❍	❍	❍
Competition	❍	❍	❍	❍	❍
Warmth	❍	❍	❍	❍	❍
Strength	❍	❍	❍	❍	❍

-Condition 4-

The first rebranding is that of Martin Luther King University (MLKU). You will get a general description of the university, together with its current logo:

Martin Luther King University (MLKU) is an established university comprising a broad range of academic disciplines, varying from science to humanities and arts.   Founded in 1920, the university has become one of the main comprehensive universities in the country, with a solid academic reputation.

Martin Luther King University

In research, MLKU strives to excel in all of its disciplines, with a strong emphasis on fundamental research. Academic progress can only be reached by substantial programs of first-rate researchers, who autonomously develop their lines of research. MLKU provides researchers in all disciplines and a stable context to perform.

The educational programs of MLKU are characterized by a constant high quality. MLKU constantly monitors the quality of all programs, at the program level, at the level of lectures, seminar and practicas, and at the level of assessment. Only the best and most reputable professors are involves in MLKU's teaching. Without exception, the graduate and undergraduate programs are among the highest-ranked programs in the country.

Which associations do you have with the current logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

After carefully evaluating its position within the gamut of universities worldwide, the board of Martin Luther King University (MLKU) started a rebranding process in April 2015. In close collaboration with the Warwick Consultancy Group and G&A Design, MLKU's positioning and visual identity were assessed. Representatives of all (internal and external) stakeholders were involved in the process. The main conclusion was that the university's core values are still relevant and viable, but that the visual identity needed an update to better express these values. The process resulted in a new visual identity, which will officially be launched in May 2016. The new logo was designed to more strongly express the mature, trustworthy, and reputable character of the university.

Current logo → *New logo*

Please indicate to what extent you agree with the following statements.
The new logo is...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	❍	❍	❍	❍	❍
Distinctive	❍	❍	❍	❍	❍
Recognizable	❍	❍	❍	❍	❍
Fitting the university's core values	❍	❍	❍	❍	❍
In line with the university's positioning	❍	❍	❍	❍	❍
An improvement to the old logo	❍	❍	❍	❍	❍

Which associations do you have with the new logo of Martin Luther King University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

The design agency also created an alternative logo for Martin Luther King University, which was not selected. Which associations do you have with this logo?

MLKU

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dynamic	❍	❍	❍	❍	❍
Conventional	❍	❍	❍	❍	❍
Creative	❍	❍	❍	❍	❍
Traditional	❍	❍	❍	❍	❍
Adaptive	❍	❍	❍	❍	❍
Stable	❍	❍	❍	❍	❍

The second rebranding is that of Anne Conway University (ACU). You will again get a general description of the university, together with its current logo:

Anne Conway University (ACU) was founded in 1960. Ever since its foundation, ACU has successfully worked on a stellar academic reputation, in teaching as well as in research. ACU has two schools: the Medical School, and the School of Business and Economics.

The research programs of ACU focus strongly on the connection between healthcare, business, and economics. Our research projects focus predominantly on issues of efficiency, effectiveness, and management in healthcare settings. Our research is published in the highest-ranked academic outlets, and our scholars invariably have an impressive track record of awards and prestigious grants.

Anne Conway University

The graduate and undergraduate teaching programs at ACU encourage students to get the best out of themselves. In a highly competitive environment, they are offered an optimal blend of lectures, study groups, projects, and self-study. Their progress is monitored by an excellent system of tutoring. Students with outstanding achievements are given the opportunity to apply for a PhD scholarship. The ACU campus offers a wide variety of housing possibilities.

Which associations do you have with the current logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	○	○	○	○	○
Achievement	○	○	○	○	○
Harmony	○	○	○	○	○
Competition	○	○	○	○	○
Warmth	○	○	○	○	○
Strength	○	○	○	○	○

After ten years of excellent service, the current logo of Anne Conway University (ACU) will receive emeritus status as of June 2016. On June 1, ACU's new logo will be launched. The logo is the result of a thorough redesign process, directed by Vision&Design Consultancy. In the process, students, faculty, staff members, and various external stakeholders were consulted. The ACU board of directors is proud to introduce the university's new corporate visual identity, which was developed to better express the core values of academic accomplishment, competition, and prestige.

Current logo   *New logo*

Please indicate to what extent you agree with the following statements.
The new logo is...

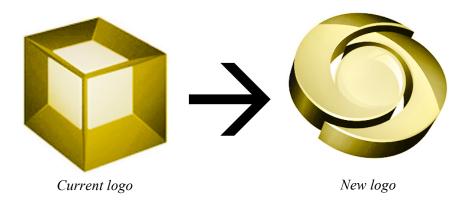|	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Appealing	○	○	○	○	○
Distinctive	○	○	○	○	○
Recognizable	○	○	○	○	○
Fitting the university's core values	○	○	○	○	○
In line with the university's positioning	○	○	○	○	○
An improvement to the old logo	○	○	○	○	○

Which associations do you have with the new logo of Anne Conway University?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	○	○	○	○	○
Achievement	○	○	○	○	○
Harmony	○	○	○	○	○
Competition	○	○	○	○	○
Warmth	○	○	○	○	○
Strength	○	○	○	○	○

The design agency also created an alternative logo for Anne Conway University, which was not selected. Which associations do you have with this logo?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Care	O	O	O	O	O
Achievement	O	O	O	O	O
Harmony	O	O	O	O	O
Competition	O	O	O	O	O
Warmth	O	O	O	O	O
Strength	O	O	O	O	O

Please be so kind to answer some questions about yourself:

What is your gender?
O   Male
O   Female

What is your age?
_____

What is your nationality?
O   Dutch
O   German
O   Other _____

What is your field of study?
O   Technical/Natural sciences
O   Social/Behavioral sciences
O   Management/Governance
O   Other _____

What is the current level of your study?
O   Bachelor
O   Master
O   Other _____

Please click on the arrows below to finish the survey.
Thank you for your participation! If you have any questions or if you are interested in the results of this survey, don't hesitate to contact me.
l.grunwald@student.utwente.nl

Appendix B – Results of the pre-test

Table 17
Results for circular and angular logos.

	Appreciation		Professionalism		Suitability		Recognizability	
	M	SD	M	SD	M	SD	M	SD
1	2.83	1.13	2.88	1.01	2.58	1.21	3.33	1.10
2	1.46	1.10	3.08	.93	2.75	1.20	3.25	1.15
3	4.00	.62	4.17	.38	3.54	.72	3.80	.90
4	3.00	1.06	3.00	1.10	2.90	1.12	3.30	1.04
5	4.04	.70	4.00	.66	3.00	1.12	3.30	1.00
1	2.12	.74	2.12	.80	2.17	1.01	3.00	1.02
2	2.50	.98	2.71	1.27	2.67	1.10	3.04	1.04
3	2.67	.92	3.12	1.12	2.71	1.20	3.21	.83
4	2.08	.83	2.33	1.01	2.12	.99	2.38	1.06
5	3.00	1.14	3.17	1.09	2.79	1.21	3.25	1.15

Table 18
Best fit for circular and angular logos.

	1		2		3		4		5	
	M	SD	M	SD	M	SD	M	SD	M	SD
1	3.50	.93	4.13	1.10	2.13	.95	3.83	1.09	1.82	.78
2	4.04	1.12	3.08	1.47	2.83	1.34	2.21	1.14	1.83	1.13
3	3.88	1.03	3.75	1.19	2.50	1.10	3.38	1.24	1.50	1.02
4	2.96	1.52	3.62	1.34	2.42	1.25	3.67	1.34	2.33	1.13
5	3.46	1.22	4.00	1.14	2.00	1.02	3.83	.87	1.71	1.04

Table 19
Results for complete and incomplete typefaces.

	Appreciation		Professionalism		Suitability		Recognizability	
	M	SD	M	SD	M	SD	M	SD
MLKU 1	2.92	.97	2.96	1.08	3.67	.76	2.92	1.18
MLKU 2	2.21	1.02	2.13	1.15	2.38	1.10	2.42	.97
MLKU 3	2.46	.88	2.37	1.10	2.58	1.02	2.25	.94
MLKU 4	1.75	.85	1.58	.88	1.63	.97	2.00	1.02
MLKU 5	3.29	1.20	3.38	1.25	2.75	1.33	3.38	1.25
MLKU 1	2.96	1.08	3.00	1.10	2.75	1.19	2.96	1.04
MLKU 2	2.04	.81	2.33	.92	2.04	.91	2.92	1.06
MLKU 3	2.42	1.02	2.50	1.02	2.46	1.06	2.50	.93
MLKU 4	2.04	.86	1.92	.78	1.96	.86	2.46	.98
MLKU 5	2.83	1.13	3.13	1.23	2.58	1.02	2.47	1.24

Appendix C – Factor analyses

Round/angular logos:

Logo judgment:

Rotated Component Matrix[a]	Component
	1
Anne Conway University - Appealing	.823
Anne Conway University - Distinctive	.694
Anne Conway University - Recognizable	.665
Anne Conway University - Fitting the university's core values	.825
Anne Conway University - In line with the university's positioning	.779
Anne Conway University - An improvement to the old logo	.784

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Old logo characteristics:

Rotated Component Matrix[a]	Component	
	1	2
Warmth	.818	
Harmony	.791	
Care	.772	
Competition		.758
Achievement		.711
Strength		.697

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

New logo characteristics:

Rotated Component Matrix[a]		
	Component	
	1	2
Care	.852	
Harmony	.848	
Warmth	.842	
Competition		.862
Strength		.768
Achievement		.741

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Alternative logo characteristics:

Rotated Component Matrix[a]		
	Component	
	1	2
Harmony	.862	
Care	.858	
Warmth	.840	
Competition		.880
Strength		.761
Achievement		.687

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Complete/incomplete logos:

Logo judgment:

Rotated Component Matrix[a]	Component
	1
Martin Luther King University - Appealing	.648
Martin Luther King University - Distinctive	.792
Martin Luther King University - Recognizable	.814
Martin Luther King University - Fitting the university's core values	.858
Martin Luther King University - In line with the university's positioning	.881
Martin Luther King University - An improvement to the old logo	.682

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Old logo characteristics:

Rotated Component Matrix[a]	Component	
	1	2
Creative	.809	
Conventional	.779	
Dynamic	.712	
Traditional		.697
Adaptive		.791
Stable		.682

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

New logo characteristics:

Rotated Component Matrix[a]	Component	
	1	2
Traditional	.856	
Conventional	.767	
Stable	.621	
Creative		.830
Adaptive		.760
Dynamic		.597

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Alternative logo characteristics:

Rotated Component Matrix[a]	Component	
	1	2
Creative	.810	
Adaptive	.799	
Dynamic	.768	
Traditional		.840
Stable		.690
Conventional		.670

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.