Exploring brand associations’ effect on (un)conscious brand liking

A study on traditional and novel brand management approaches to memory - exemplified by the Vestas employer brand

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Executive summary

Brandassociationer er fundamentale for præferencedannelse og beslutningsprocesser. Studier har vist at brandassociationer påvirker disse faktorer og derfor kan føre til anseelig værdi for et brand. Anerkendte brandmanagement professorer inddrager derfor brandassociationer i deres indflydelsesrige brand equity modeller, som en grundlæggende forudsætning for opbygningen og vedligeholdelsen af et stærkt brand.


Med dette udgangspunkt undersøger denne kandidatafhandling, hvordan brandassociationer er funderet bevidst og ubevidst i hukommelsen og hvordan de påvirker brandpræference. I et eksperimentalt studie testes sammenhængen mellem brandassociationer og præference. Endvidere undersøges det om et højt antal inducerede associationer kan påvirke brandpræferencen positivt.

Resultaterne viser, at brandassociationer påvirker brandpræference om end effekten er forskellig, alt efter om den måles på et bevidst eller ubevidst plan. Eksperimentets mest interessante fund var, at et højt antal inducerede associationer havde en signifikant effekt på den ubevidste præference. Trods eksperimentets fundning i anerkendte teorier, synes det vanskeligt at opnå en fuld forståelsesramme for resultaterne og den generelle sammenhæng mellem associationer og præference. Overordnet betyder det, at mere forskning vil være tilrådelig.

På baggrund af testresultaterne foreslås det, at den nuværende tilgang til brandmanagement tages op til revision og inddrager neurosciencevidenskab i forståelsen af brandhukommelse. En udvidet forståelse kan være fordelagtig i det strategiske arbejde med brandassociationers effekt på præference og blive et værdiskabende parameter.
Acknowledgements

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1. Introduction

Brand associations are fundamental to brand equity. According to the father of today’s most dominant brand equity model\(^1\), Professor Kevin L. Keller (1993), brand associations link to brand preference, choice, and image. The pioneer of strategic brand management Professor David Aaker (1991) shares this opinion and argues that brand associations convey the attitude developed towards a given brand by consumers and “represent the bases for purchase decisions and brand loyalty” (Ibid p. 110). The argument that brand associations are fundamentals of brand equity is further supported by empirical research, which suggests that the greater the number of brand associations the higher the brand equity (Chen, 2001; Krishnan, 1996).

Brand liking plays an important role in the consumer’s decision making process which makes it an attractive brand attribute for marketers. Consequently, research on brand associations is relevant to obtain in the understanding of consumers. This will help marketers build strong brand equity. In other words building and maintaining brand associations may be the key to success for many companies.

“The power of a brand lies in what resides in the minds of the customer” (Keller, 2008, p. 48). This means that brand associations and brand liking are cognitive constructs placed in consumer memory. In line with this argumentation, marketing research is of great interest. It provides understanding for the consumer’s memory and hence enables marketers to create effective marketing collateral that will influence consumer’s thinking and behavior.

Conventional marketing research has enabled brand managers to understand a great deal about brand associations and their residence in memory. Nonetheless, the large gap between strategy and execution reveals inconsistencies between what is found in marketing research and the actual consumer behavior towards brands in the marketplace. The problem is that “what people say, is not what they do” (Gordon, 2001, p. 281).

\(^1\) Customer Based Brand Equity – CBBE model see appendix 1
“Traditionally, explanations of consumer behavior are cast in terms that are rooted in cognitive psychology, before people buy, or choose or decide, they engage in more or less elaborate, conscious information processing” (Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005, p. 193). Today, however, several cognitive neuroscience studies suggest the importance of unconscious emotions in consumer preference-formation (Ibid). For instance, Chartrand and colleagues (2008) demonstrated how subliminally cued motivation can activate purchasing goals.

Most brand management scholars recognize that brand associations can be ‘intangible’ and that creating ‘emotional’ attachment to brands is important. Nonetheless the notion of emotion in marketing literature is a blurry term as it only covers what is known to neuroscientists as the conscious state of ‘feelings’. Thus marketers ignore emotions that are primarily believed to be unconscious.

To cognitive neuroscience this discrepancy is problematic since “thoughts are never separate from emotion, and emotions never separate form thought…. Brands are encoded in memory on a cognitive (thinking, analytical, considered) and emotional (somatic) basis. These two elements of brand encoding are inextricably linked and it is emotional coding rather than reasoned argument that determines whether or not people take notice of the stimuli related to the brand, such as direct communications.”(Gordon, 2001, p. 285).

In this light, it is interesting to explore the divergent understandings of consumer memory to investigate brand associations’ relationship to brand liking. This study will focus on how brand associations may affect conscious and unconscious brand liking.

1.1 Research question
With offset in the marketing research discrepancy explained in the introduction the research question for this study is the following:

How do brand associations affect conscious and unconscious brand liking - exemplified by the Vestas employer brand?
2. The Vestas employer value proposition as inspiration

The development of the Vestas employer value proposition\(^2\) (EVP) to prospective employees has been a source of inspiration for this thesis.

In the nature of my employment with Vestas from June 2010 – August 2011 I have gained considerable insights to the day-to-day work with the company’s strategic employer brand management. The Vestas brand management approach and development of their EVP can be identified as a positivistic consumer-based approach coined by Keller (1993) (Heding, Knudsen F., & Bjerre, 2009). Via six building blocks in the Customer-Based Brand Equity pyramid (Appendix1), the company is able to influence the consumer’s preference and purchasing behavior. The brand is considered a cognitive construal in the consumer mind and the marketer is believed to control the brand creation (Ibid).

The following will briefly outline how EVP is related to brand associations and how it is developed. For further background on Vestas, please refer to appendix 2.

**EVP and the importance of brand associations**

“A brand’s value proposition is a statement of the functional, emotional and self-expressive benefits delivered by the brand that provides value to the customer. An effective value proposition should lead to a brand-customer relationship and drive purchase decisions” (Aaker, 1996, p. 95).

Equally in a Vestas context, the EVP is the accumulated brand identity and represents attractive brand associations that the company would like current and future employees to remember. Related to the abovementioned quote by Aaker, the EVP is what Vestas relies its employer branding upon. An effective EVP can drive decisions and is therefore of great significance to the company.

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\(^2\) Employer Value Propositions are the fundamental values that a company communicates to internal and external audiences.
Here, it is important to note that consumers’ brand associations feed into the creation of a credible EVP (Aaker, 1996, p. 131). Also, brand associations are key elements of the customer mindset which is a fundamental part of the value creation for the brand. Thus, in the light of the consumer-based approach, in order to create an effective EVP the marketer must understand the phenomenon of brand associations.

**Development process of EVP**

The employer branding department draws a parallel with product branding. In practice, this means that the EVP’s are developed based on research of what the recruitment markets and target groups find most attractive with an employer, similar to the research of a consumer’s requirements for a given product (Andersen, 2010). The research process consists of several steps of qualitative and quantitative research that lead to final branding strategy herein e.g. advertisements. The figure outlines the research process, for further details see appendix 3.

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![Figure 1 Vestas EVP development process from 2007 - 2010](image)
The advertisement below is an outcome of the 2010 EVP research process. The current EVPs are; *challenging work, ever-changing environment and development* (Andersen, 2010).

![Vestas employer branding advertisement reflecting current EVPs](image)

This thesis is inspired by Vestas’ approach to EVP and the premise that the company can influence the consumers when their mindset is understood. On this background it is interesting to examine how brand management scholars understand brand associations in relation to preference. Moreover, how cognitive neuroscience school of thought can elaborate on this knowledge with perspectives on conscious and unconscious memory types.
3. Readers guide

The research question was; *how do brand associations affect conscious and unconscious brand liking exemplified by the Vestas employer brand?*

The question is investigated with a foundation in on how pioneering brand equity scholars understand the role of brand associations in building brand preference.

Therefore, the thesis structure consists of the following parts:

- Introduction presents problem area and the subsequent research question.
- The theory framework starts with different brand liking definitions and approaches. Next, in a brand management perspective the phenomenon of brand associations are defined. Then, consumer memory is examined from a branding point of view and a cognitive neuroscience perspective.
- Further, a novel memory approach is presented and considered in the post experiment discussion.
- On the foundation of the theoretical review two hypotheses will be created and an experiment will test the effects of brand associations on conscious and unconscious brand liking.
- Discussions and evaluation of experiment quality will end in perspectives for further research and implications for brand management and subsequent in a conclusion.

![Figure 3 Thesis structure](image-url)
4. Preliminary methodological considerations

The subsequent section will clarify the quantitative research approach deployed in this study. With this choice I seek to add deductively produced and positivistic inspired knowledge to the social scientific field of branding. First, however, I will outline my preliminary considerations for this choice.

My choice is inspired by Professor Stephen Gorard (2003), who claims that in social science there is an imprisonment by a paradigm. This imprisonment implies that qualitative and quantitative approaches to data collection are pure opposites. Here, there is an underlying assumption that the two methods cannot be combined for anything useful in the field of social science. This is a result of a paradigm that suggests that you must be a positivist per se if you are using numbers in your research and hence you must be a positivist in philosophy and traditional in style. Likewise if you are using non-numerical research methods you must be an interpretive holistic researcher believing in several perspectives, rather than one truth.

Gorard argues that this imprisonment should be dissolved in order to understand that all methods to social scientific research can benefit from using numbers and the distinction refers to a false dualism that does not benefit any research methods (Ibid). Rather a combination of approaches is useful in research since “all methods have relative advantages making them more or less appropriate for answering different research questions. Putting them together increases our research power”(Ibid p. 227). While a 50/50 dedication to each approach is out of the scope for this study, the present thesis will work from a positivistic mindset while acknowledging that it may be producing a tiny piece of knowledge in a possible overall constructed reality.

Quantitative research approach

“Positivism sees social science as an organized method for combining deductive logic with precise empirical observations of individual behavior in order to discover and confirm a set of probabilistic casual laws that can be used to predict general patterns of human behavior” (Neuman, 2000, p. 66).
In the present thesis my approach to research is positivistic hypothetic-deductive. This choice is defended by the experimental approach to my research question that seeks to understand the conscious and unconscious sides of brand liking. Following the premise that the unconscious emotions (often) are unavailable as outspoken feelings this matter cannot be studied as a constructivist narrative in the form of e.g. an interview (Pole & Lampard, 2002).

The approach to knowledge is therefore to use deductive reasoning that implies a “logic process of deriving a conclusion about a specific instance based on a known general premise known to be true” (Zikmund, Babin, Carr, & Griffin, 2010, p. 48). In practical terms, I will outline a theoretical foundation, which will serve as a background for the formulation of a number of hypotheses. These will be tested in an experiment on a targeted sample population and the data findings are statistically analyzed with the SAP based tool JMP (Neuman, 2000). Further, I will also apply a deductive logic to the discussion and concluding parts of this work.

One element could deviate from the positivistic school of thought. As the research question indicates, the aim of the study is to understand how consumers’ brand liking is affected by associations. Since the subjective experience is the outcome, this could appear to be a phenomenological study (Smith, 2011). Nonetheless, the focus of experiment was not on respondents’ subjective experience but on behavioral changes affected by induced brand associations.

Detailed explanation on experiment design, statistical results and an evaluation of the experiment quality are found in designated chapters.
5. Delimitations

Due to the time and space restraints for a master’s thesis, some restrictions to the scope of this study have been deployed. These are outlined in the following.

Brand management theories

This thesis will use David Aaker and Kevin Keller’s pioneering work on brand associations and brand memory in relation to brand value creation. Critical voices would claim that these approaches to brand equity and management are outdated and have been overtaken with newer thoughts of how to create brand value. Nonetheless, Aaker (1991, 1996) and Keller (1993, 2008) are the most dominant and influential thinkers of brand equity to date and have provided the most thorough work on brand associations and brand memory which is the primary area of interest for this thesis. Thus it is (still) relevant to use these scholars.

Also, well aware that a paradigm shift in brand management approaches has occurred the fact is that large global companies including Vestas are taking a consumer-based approach rooted in Keller’s Customer-Based brand equity model (CBBE) see appendix 1. Hence, in order to elaborate, challenge or simply to provide useful inputs to this research area it is relevant to understand the consumer with a foundation in this perspective. This thesis solely focuses on brand associations and liking although building strong brand equity involves more than these aspects.

Cognitive neuroscience memory theories

The human memory is a complex research area of much academic discussion. In the scope of this study, relevant cognitive neuroscience theories will be applied to elaborate our understanding of how brand associations are in play on a conscious and unconscious level in long-term memory. Also, a novel approach to memory will be presented to elaborate our understanding of how brand associations work and thus may be beneficial for the strategic

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3 Brand management turned from a positivistic to a constructivist approach with the rise of relational approach in 1998 embracing more chaotic forces in consumer culture (Heding et al., 2009).
brand management. This focus implies that no specific attention will be given to e.g. other types of memory.

(Employer) brand

Originally, a brand was linked to the identification of a product and used to differentiate tangible products. Today, the definition is used extremely broadly and covers many aspects of branding. Among those terms employer branding has risen (Heding et al., 2009). According to branding scholars Backhause & Tikoo “employer branding is the differentiation of a firms’ characteristics as an employer from those of its competitors” (2004, p. 502). Despite the field of employer branding’s booming popularity in business and practitioners’ press, this study is not built around on theories of applied employer brand management as this area, in academia, is restricted to only a few articles (Ibid).

Overall employer branding has a dual focus on internal branding (retention of employees) and external branding (attracting new staff). However, key area of interest of this thesis is the external employer branding. Further, there are many similarities between external employer branding and product branding since both approaches target an external audience (Backhaus & Tikoo, 2004). On this background and the lack of academic research on employer branding, this thesis will have outset in general brand management theories on brand associations as value creators. This means that terms such as recruitment target group and job are to be considered equivalent to consumers and product and so forth.

Experiment

The experiment will concentrate on an authentic Danish target group specified by Vestas. This group consists of engineers with extensive working experience which is defined by the company as a key target group that is difficult to reach. The brand awareness of the Vestas employer brand is relatively high with a ranking as number seven in the employer branding consultancy, Universum’s list of Ideal Employers 2010 in Denmark (Universum, 2011).

4 From a cognitive neuroscientific perspective the human memory is divided into three types; sensory memory, working memory (short-term memory) and long-term memory.
Therefore this is considered a precondition for the hypotheses, the latter experiment and conclusion.

6. Brand liking
To create a context for this thesis study on brand associations’ effects on conscious and unconscious brand liking the following sections will provide a literature review that will serve as framework for two hypotheses. First, I will outline the phenomenon of liking with two diverging perspectives; the traditional cognitive brand management approach and the cognitive neuroscience.

In relation to the introductory discrepancy between dominant brand management and cognitive neuroscience approaches to brand associations it is important to be familiar with the cognitive and affective approaches to liking. Further the mere exposure effect can also be understood in the light of the two understandings.

6.1 Cognitive brand management approach
In a branding context, liking refers to the positive attitudes consumers hold in memory towards a brand (Arnould, Price, & Zinkhan, 2005). The attitude, which can be positive or negative, is determinant of the brand evaluation and decision making (Aaker, 1991, 1996; Keller, 1993). Therefore, liking is crucial in influencing consumer behavior. The claim is further supported by a study conducted by the Advertising Research Foundation\textsuperscript{5} an analysis of the correlation between successful advertising campaigns and their pre-test results showed that ‘liking’ had the highest correlation as a predictive measure of sales success (Gordon, 2001).

Brand liking is a competitive advantage since it is not connected to a specific feature of the brand but instead represents the overall feelings towards the brand (Aaker, 1991). Studies have shown a positive relationship between the number of brand associations and brand liking (Ibid). Therefore it is favorable to have a large number of brand associations in memory because it makes it easier for the consumer to recall a particular brand node (Krishnan, 1996, p. 392).

\textsuperscript{5} An influential nonprofit industry association for marketers
Cognitive mechanism

Aaker and Keller’s approaches to the consumers’ mindsets are rooted in cognitive psychology. It is inherent in the cognitive research tradition that consumers collect information about brand attributes to reach a decision (Arnould, Price, & Zinkhan, 2005). Cognitive decision making models “emphasize beliefs rather than emotions and behaviors as the key determinant of attitudes and behaviors and they assume that consumers make a decision in a thoughtful and systematic way” (Ibid p. 656).

Similarly, behavioral economists refer to this type of decision making as reasoning. Implicit in this view is the economic concept of the rational man – Homo Economicus. A consumer who is characterized as a rational, deliberate and effortful thinker and decision maker. In other words, a consumer who evaluates his attitudes in a conscious manner.

6.2 Cognitive neuroscience approach

In a cognitive neuroscience perspective “liking” refers to the experienced value based on the hedonic pleasure you derive from consuming a given brand. Cognitive neuroscience scholars Plassmann, Ramsøy and Milosavljevic (Forthcoming 2012) refer to a study which has investigated how favorable brand associations alter experienced value signals in the brain. This is the highly cited study by McClure and colleagues (2004) which showed that the experienced value of Coca Cola vs. Pepsi depends on brand associations.

Liking - a sign of an underlying emotional state

Liking is a sign of an underlying emotional state (Gordon, 2001). Pioneering neurologists Bechara and Damasio (2005) term emotions as ‘somatic markers’. Somatic markers are per se unconscious emotions but can sometimes lead to consciously experienced feelings. Thus, these somatic markers will guide people’s emotions and feelings and may sometimes lead to unconsciously driven decision making (Ibid).

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6 Liking is represented in the reward system and is related to value processing in the brain. Scholars within the field differentiate between liking and wanting responses to stimuli. See (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012, p. 25) for further insights into the area of research.
The kind of decision making where both unconscious emotions and conscious reason are involved is termed as affective (Arnould, Price, & Zinkhan, 2005). This implies that consumers make decisions based on what ‘feels right’ or on a ‘gut feeling’. This ‘gut feeling’ can be identified as the aforementioned somatic marker. That is an unconscious and embodied attitude (liking) surfacing to consumers’ consciousness via a feeling that may direct liking and decision making.

This affective type of decision making shares strong similarities to Nobel laureate Daniel Kahneman’s (2006) proposed generic mode intuitive thinking and deciding. Intuitive thinking is identified as spontaneous, effortless and without conscious thought or computation. Further, Kahneman and professor Amos Tversky’s (1981) work mapped out bounded rationality7 and suggest that many decisions are emotionally biased and people make rather irrational choices.

Cognitive neuroscience scholars Berridge & Winkielman (2003) take this a step further and argue that positive affective reactions can be elicited unconsciously without a person’s subjective awareness of it. Further, they suggest that subliminally induced liking can influence later consumption behavior (Ibid). This claim indicates the existence of completely unconscious liking that may drive decisions which we are unaware of.

Nonetheless, studies on patients with brain damage reveal poor decision making when conscious reasoning systems are damaged, but unconscious emotional systems still are intact. The same occurs if emotional systems are damaged, but reasoning systems are intact. Thus the separation of emotion and reason is misleading. Instead of two separate systems they should be seen as a partnership (Zaltman, 2003).

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7 Herbert A. Simon (1955; 1979) suggested that decision makers are bounded rational. This implied that utility maximization is often replaced with satisficing.
6.3 What creates liking? - The mere exposure effect

The mere exposure effect is a psychological phenomenon that refers to how a repeated exposure to a stimulus object will enhance preference for that specific object (Moreland & Zajonc, 1989; Zajonc, 2000; Fang, Singh & Ahluwalia, 2007). It is a widely acknowledged and used phenomenon in branding and advertising. The explanation for the effect is “based in the concept ‘fluency’ or the ease in which information is processed” (Fang, Singh, & Ahluwalia, 2007, p. 97).

The driving force underlying the mere exposure effect may be seen from the cognitive perspective and the affective perspective as well. The cognitive perspective suggests that people base their preference on their perceptual fluency experience. This means that “stimuli that come to mind more readily are better liked” (Fang, Singh, & Ahluwalia, 2007, p. 97). Most marketing studies use the cognitive perspective as the explanatory mechanism for liking e.g. Janiszewski & Mayvis (2001) and Nordhielm (2002).

The affective perspective argues that the processing fluency itself lead to positive affective responses which in turn lead to more positive evaluation. This means that “interferences are based on the affective experience and not the perceptual fluency” (Fang, Singh, & Ahluwalia, 2007, p. 97). In other words, people infer their evaluations from how they feel e.g. if I feel good, I must like it (ibid).

6.4 Brand liking in sum

In sum, brand liking is defined as an overall positive evaluation of a brand. Liking is crucial to brand equity and is meant to be dependent on large numbers of favorable brand associations in memory. We learned that there are two perspectives of the underlying mechanism that drives decisions and preference. One is the cognitive brand management perspective. Another is the affective perspective which is more in line with the neuroscientific school of thought.

The cognitive decision making model emphasizes beliefs rather than emotions as drivers for attitudes. In relation to the introductory discrepancy, the limitation of the cognitive
approach is that the importance of ‘somatic markers’ is not considered. Cognitive neuroscience argues that the conscious and unconscious memory should be viewed coexistent since they have mutual influences on one another (Zaltman, 2003).

7. Brand associations

We know from the former chapter that brand associations are vital for brand liking. It is relevant to outline how these are understood by the prominent brand management scholars, Aaker and Keller. The following sections will identify what brand associations are and how they function in creating liking and value for a company.

7.1 Aaker’s Categorization of brand associations

According to Aaker, brand associations are “anything linked in memory to a brand” (1991, p. 109). He suggests eleven types of brand associations. However, not all types of associations may be of equal interest to the brand manager only those affecting buying behavior (1991, p. 113). Product attributes and consumer benefits are the most important classes of brand associations whereas others may also be important depending on the context.

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*For further details see (Aaker, Building Strong Brands, 1996, s. 114-128)*

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*Figure 4 Types of Brand Associations (Aaker 1991)*
Product attributes

Product attributes are based on associating the brand with a characteristic of the product. When the association is meaningful it can directly translate into buying the brand or not. These associations can include performance of the product or durability. For instance, the Vestas employer brand is a well known brand among engineers (Universum, 2011), perhaps due its position as the world’s leading wind turbine manufacturer. Until recently the brand used the taglines ‘No. 1 in Modern Energy’ and the explicit employer brand tagline ‘Power Your Life’⁹ which both describe attributes that are based on characteristics of Vestas.

Customer benefits

Product attributes and customer benefits are very similar since these types of brand associations can serve as both. For example the brand association ‘wind energy manufacturer’ is both a product characteristic of the Vestas employer brand and a customer benefit. Customer benefits are divided into two types; rational and psychological benefits. Rational benefits are related to product attributes. For instance, if a person needs a job, a rational benefit could be that it pays the highest salary. On the other hand, psychological benefits are those related to feelings. An example is when a job provides self-image enhancement via a prestigious title.

7.2 Brand associations’ role in creating brand equity

In his significant work on brand equity (Appendix 4) Aaker suggests that brand associations are vital in creating value for the company since the host of different brand associations provide value to in different ways. He identifies five propositions that all feed into creating value for the company and thereby help generate strong brand equity. Those are; helping to process/retrieve information, differentiating the brand, generating a reason to buy, creating positive attitudes/feelings and lastly providing a basis for brand extensions (1991, p. 110).

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⁹ In 2011 these taglines were changed to ‘Wind. It means the world to us’ and ‘Experience the forces of wind’
Help process and retrieve information

A brand association can serve as an information chunk that can help the decision maker to cope with the otherwise large amount of information that the consumer may have difficulties accessing and processing. Associations can also help in the interpretation of facts. For example, with high-technology brands such as HP, brand associations may influence the interpretation of a long specifications list (Aaker, 1991).

Differentiate

Associations of a brand may play a critical role in differentiating brands from one another. A specific brand association linked to a certain brand can become the key competitive advantage. An example is the high performance soft-drink Gatorade that is highly associated with athletic competition where competing brands may have trouble being credible in claiming the same feature. Hence, brand associations can be a great barrier to competitors (Ibid).

Reason to buy

Plenty of brand associations (some suggested by companies e.g. EVP) include product attributes or customer benefits that provide the decision maker with reason to buy or consume the brand. An example is “That calls for a Carlsberg” which provides the consumer with a reason to buy the beer whenever one has an occasion. Another example is the Vestas tagline “Experience the forces of wind”. If this is well-positioned in the consumer’s memory as a brand association, it can provide future Vestas employees with a reason to “buy”. Other brand associations may provide credibility and confidence in the brand. Thus, influence the purchase decision (Ibid).
Create positive attitudes

Some brand associations are interlinked and can stimulate positive attitudes that are transferred to the brand. Celebrity endorsers, symbols, and slogans can in the right context elicit positive feelings towards the brand (Ibid). For instance, Nike has successfully used Michael Jordan as an endorser. Further, the DSB’s mascot *Harry* may help elicit positive brand attitudes. Finally, Nokia’s slogan “connecting people” is spot on in most situations.

Basis for extension

An association can also serve as the basis for an extension by creating a sense of fit between the brand and the brand extension or by providing reason to buy the extension (Ibid). For example, the brand association ‘low cost’ with Easy Jet and Easy Hotel shows how marketers can use the associations as a platform for extension.

7.3 Keller’s categorization of brand associations

Keller (1993) defines a brand association as “the other informational node linked to the brand node in memory and contain the meaning of the brand for consumers” (Ibid p. 3, 1993). Brand associations come in all forms and may reflect aspects of the product or characteristics independent of the product. Brand associations reflect consumers’ perceptions of the brand. The sum of these perceptions is what defines the brand image which is crucial for customer-based brand equity (Keller, 1993). For example, consider the Vestas brand. If someone ask you what comes to mind when you think about Vestas, what would you say? You might reply with brand associations such as ‘engineers’, ‘Denmark’, ‘global’ and so forth. The figure below shows some associations mentioned for Vestas.10

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10 These associations were expressed when asked to perform a free association task on the Vestas brand for further accounts please refer to this thesis section on experiment design – pre-test survey.
Keller identifies several types of brand associations relating to attributes, benefits and attitudes.

**Brand attributes**

Brand attributes are descriptive features characterizing the products or service. These can be product and non-product related. Product related attributes are associated directly to the product, such as the colour of the packaging or the taste of it. Non-product-related attributes are identified by being external aspects related to the purchase or consumption of the brand. The non-product-related attributes can be divided into four groups: price information, packaging, user imagery\(^{11}\) and use image\(^{12}\) (Heding et al., 2009).

**Brand benefits**

Brand benefits are personal values and meaning that the consumer has attached to the brand. There are three categories of benefits: functional, experimental and symbolic.

\(^{11}\) An impression of the type of person that consumes the brand

\(^{12}\) Impressions of the context in which the brand is used
Functional benefits are personal expectations of what the brand can do for the consumer. Experimental benefits comprise the sensory experience of using the brand (Ibid). A Vestas example would be: how does it feel working for Vestas? What kind of pleasures will I obtain from working for this brand? This aspect provides differentiation for the consumer and satisfies hedonic consumption needs. Symbolic benefits relates to self-expression and how consumption of a certain brand can serve as signals to others (Ibid).

**Brand attitudes**

Brand attitudes refer to the consumers’ overall evaluation of the brand. The type of brand associations relating to brand attitudes are important since they often guide brand choices. As aforementioned in the liking chapter, liking is a positive attitude that is a favourable brand asset to the marketer since it drives evaluation and decision making.

**7.4 Brand associations role in creating customer-based brand equity**

To create strong CBBE (Appendix1) the consumer needs to have strong, unique and favorable brand associations in mind. This is important because these brand associations will differentiate the brand from other competing brands (Keller, 2008).

**Strong brand associations**

The strength of brand associations is influenced by two factors; personal relevance and the consistency with which it is presented over time. The more deeply a consumer thinks about any brand information and relates it to existing knowledge in memory, the stronger the brand association will be (Ibid). This corresponds to the way the association is spread in the associative network by the brand as a node (the associative network model will be elaborated in the following chapter). Strong associations will be recalled faster and will make the consumer pay attention to the brand (Heding et al., 2009).

**Favourable associations**

Favourable associations for a brand are those identified as desirable to consumers in terms of convenience, reliability, and effectiveness and deliverable by product. Marketers create favourable associations by convincing consumers that the brand posses just what the consumer need and want. (Keller, 2008).
Unique associations

Unique brand associations refer to the brand’s unique selling proposition. At best, the brand associations should be exclusive to that specific brand and not be shared with any other competing brands (Ibid). In a Vestas context, the EVP would ideally reflect unique features about the company as a workplace.

8. Consumer memory – the associative network model

On the account that a brand and thus brand associations are cognitive constructs residing in the memory of the consumer, understanding consumer memory is relevant in order to build brand liking. The following will outline how brand knowledge functions in the associative network model\(^\text{13}\) that both Aaker (1991) and Keller (1993) build their approach to brand associations on.

While memory models differ in form and underlying assumptions consensus is that memory can be understood as links between various concepts (Krishnan, 1996). The associative network approach to memory deals with how we store knowledge, how we remember and how our attention is captured (Heding et al., 2009). In the associative network model, memory is composed of knowledge that is organized as a network of connections (Ibid).

Brand knowledge in memory consists of nodes. Nodes represent stored information or concepts which are connected by links in associative networks. Links represent the strength of association between information and concepts. The links vary in strength as some associations are stronger than others. When the associations are directly connected to the node they are easier retrieved than others. The figure below shows an example with Vestas as a node and the connected associations interlinked to the brand.

\(^{13}\) The associative network model is rooted in cognitive psychology. In this school of thought a key metaphor for man is that of a computer. When a man is exposed to stimuli from his or hers environment (input, information, brand), these stimuli enter the human mind via the senses and lead to action (choice, buying, consuming) (Heding et al., 2009).
Spreading activation

At any point in time an information node in memory may be activated and knowledge is recalled or retrieved by a sensory input and a spreading activation begins. The spreading activation can be triggered when presented with a cue, which can be in the form of external information e.g. seeing or hearing the brand. It can also be internally triggered by retrieving information which is processed e.g. if a person thinks about some concept. A particular node in memory is activated and activation spreads from that node to other nodes connected to it in memory (Heding et al., 2009).

When the activation of a particular note exceeds a threshold level the person recalls the content of that node. The spread of the activation depends on the number and strength of the links connected to the activated node. Therefore, as an example, if the node ‘Vestas’ is activated, the spreading activation depends on how many and how strong the brand associations are. This means that brands whose linkages have the greatest number and
strength will receive the most activation (Keller, 2008). All kinds of information can be stored in this network including verbal, visual, and abstract or contextual information (Ibid).

9. Measuring Brand Associations

To optimize branding efforts that will create value marketers are highly interested in understanding the brand associations that are resides in consumer’s memory. It is believed to reveal how, when, where and why consumers think of and use brands. Traditional marketing research includes direct and indirect approaches to study how different brand associations are linked to a brand. Both quantitative and qualitative methods are deployed to obtain insights on consumer mindsets. The approaches are explained below.

Direct measurement approaches

Direct approaches may be useful in learning about consumer’s brand associations. For instance, online surveying is a cost effective quantitative research method that is widely applied. This method is often used to examine consumers brand associations to understand their beliefs, attitudes and behaviour.

The surveys often employ various scale questions that allow marketers to measure brand knowledge and assess the depth and breath of brand associations (Keller, 2008). An example is “how well do you remember the Vestas tagline?”. Further, Keller suggests open-ended questions such as “What are the strongest associations you have to the brand? What comes to mind when you think of the brand?” “What is good about the brand?” and “What is unique about the brand” (Ibid p. 380). These kinds of questions can provide answers to the level of strength, favourability and uniqueness of the brand. In other words, how the brand creates value for the consumer. This will uncover what type of brand associations the marketer should promote in their branding efforts.

Qualitative approaches are more costly but can be effective in uncovering more extensive reasons for consumer behaviour. In focus groups or individual interviews the researcher may directly ask “what brands are used? Why? What brand associations exist? What feelings are
associated with the brand use?“ and thereby find out what the brand means to the consumer (Aaker, 1991, p. 136).

**Indirect measurement approaches**

Direct approaches may be useful in learning about consumers’ brand perceptions. However, respondents may be unwilling or unable to provide truthful answers.

First, consumers may be unwilling because they may feel that the information is embarrassing or private (Aaker, 1991). For example, a respondent may be choosing Vestas as an ideal workplace because it makes him feel more socially accepted than a job in British American Tobacco would. When asked directly he may provide a rationalization of the answer that appears logical. His answer could be; good career opportunities in a large company, international colleagues, answers that may in fact be secondary feelings, thoughts and attitudes towards the brand.

Second, consumers may be unable to provide answers as to why they buy/consume certain brands simply because they are unaware of the real reasons. Therefore, the marketer may obtain more truthful and informational by using more indirect methods Aaker stresses the importance of using indirect approaches by saying: “It is inexcusable to guess at people’s perception of a brand” (1991, p. 137).

**Projective methods**

Projective methods address the issues of a consumer’s unwillingness or disability to provide answers about his brand associations. The goal of the research is usually disguised and “instead of focusing on the brand, the discussion is about use experience, the decision process, the brand user or off-the wall perspectives such as considering the brand to be a person or an animal” (Aaker, 1991, p. 136). These types of methods allow “the respondent to project himself into a context which bypasses the inhibitions or limitations of more direct

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14 In psychology the most famous projective technique is the Rorschach test, in which subjects are presented with ink blots and asked what the blots reminds them of. Projective techniques have been used in marketing since the late 1940’ies and 1950’ies beginning with motivation research. For further details see (Keller, 2008, p. 363)
questioning” (Ibid). Please see appendix 6 for an elaboration of some indirect measurement techniques.

10. Brand associations in sum – a comparative overview

The following is a comparative overview of Aaker and Keller’s approaches to brand associations. At first glance their categorizations of them differ in terms of detail focus. Nonetheless, they share many similarities. Keller identifies a number of different types in an overall umbrella of attributes and benefits. Both scholars agree that brand associations play a vital role for brand equity via e.g. brand liking. Further, consumer unwillingness or inabilitys are pitfalls to marketing research. To encounter this issue, indirect and projective research methods are suggested. Finally, brand associations reside in an associative memory network with roots in cognitive psychology.

<table>
<thead>
<tr>
<th>What is a brand association?</th>
<th>Aaker’s perspective</th>
<th>Keller’s perspective</th>
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<td>“Anything linked in memory to a brand” (1991, p. 109).</td>
<td>“The other informational node linked to the brand node in memory and contain the meaning of the brand for consumers” (1993, p. 3).</td>
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<th>Brand associations categories</th>
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<td>• Customer Benefits</td>
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<th>Brand associations measurement approaches and methods</th>
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<th>Pitfalls to measurement of brand associations</th>
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<td>• Unwillingness to share their behavior</td>
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<td>“Respondents may be unwilling because they feel that the information is embarrassing or private.” (1991, p. 136)</td>
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<tr>
<td>• Unable to share their behavior</td>
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<tr>
<td>“Respondents may be unable to provide information...because they don’t know the real reason. For example they may not be consciously aware that a feeling of social acceptance was a dominant feeling and motivation” (1991, p. 136)</td>
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<tr>
<td>• Unwillingness to share their behavior</td>
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<td>“…consumers may feel that it would be socially unacceptable or undesirable to express their true feelings – especially to an interviewer whom they don’t even know!” (2008, p. 360)</td>
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<tr>
<td>• Unable to share their behavior</td>
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<tr>
<td>“Or they may simply find it difficult to identify and express their true feelings when asked directly, even if they attempt to do so.” (2008, p. 361)</td>
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The table will continue on the next page.
In the associative network model, memory composes of knowledge that is organized as a network of connections. The building blocks are nodes and connecting links that is structured into networks. (Heding, Knudsen F., & Bjerre, 2009, p. 88). Strong links are associations which are more easily retrieved than others.

11. Relevance of implicit brand memory for brand management

As outlined in the earlier an earlier chapter (cf. brand liking), both conscious and unconscious elements are at play when we form associations and preference for brands. Furthermore, from the chapters on brand associations and consumer memory we know that the unconscious emotional memory is not considered in the brand management approaches suggested by Aaker and Keller. Therefore, a closer look at different explicit and implicit memory types is useful when the aim is to understand consumers’ conscious and unconscious brand liking. Explicit memory is believed to be conscious and declarative, whereas “the term implicit memory indicates all those memory functions that take place outside our consciousness” (Franzen & Bouwman, 2001, p. 78).

Aaker and Keller suggest that some brand associations may be difficult to elicit due to consumers’ unawareness of or inability to report them. This implies that some associations may be residing in the unconscious memory. To counter this issue, indirect and projective research methods are suggested to uncover “subconscious reasons and motives” for purchasing behavior (Keller, 2008). A dominant part of marketing researchers believe that explicit memory enables implicit memory to occur (Zaltman, 2003). In practice, this is done by tapping into declarative memory via indirect and projective research approaches.
In a cognitive neuroscientific view, these approaches are problematic because conscious and unconscious memories reside in two different parts of the long-term memory system. Thus, it is inaccurate to rely on consumers’ explicit memory and their ability to tell (self-reporting and introspection) what they are assumedly unaware of. Consequently, this means that marketers may not be able to retrieve insights on unconscious brand associations by asking conscious questions in one or the other indirect form. “Our consciousness allows only limited access to the processes that take place in our brain. Many background processes are inaccessible. Introspection does not really give us a glance into our own psyche – only information on what consciousness has selected. As a source of information on brand representations, it is limited” (Franzen & Bouwman, 2001, p. 45).

Finally, “consciousness is a small part of mental activity and is estimated to be only 5% of the whole. That leaves 95% of activity in the brain happening below the level of consciousness” (Gordon, 2001, p. 286). Although this discovery is not notably reflected in the widely applied approaches by Aaker and Keller, the findings are applied in several recent consumer behavior articles; Zaltman (2000), Bargh & Chartrand (2000), Gordon (2001), Dijksterhuis and colleagues (2005) and Chartrand and colleagues (2008) which have interest in the nature of implicit brand memory.

Therefore, based on the abovementioned arguments it is relevant to elaborate the current assumptions of consumer memory seen from a cognitive neuroscientific perspective. This will offer further understanding for conscious memory (declarative) and unconscious memory (non-declarative) and provide an extended understanding of how brand associations are represented on both levels of consciousness. This is supported by marketing scholar H.S. Krishnan who advises more research on brand associations that tap into implicit memory. “Since, such measures of implicit memory should provide indications of brand associations that cannot be articulated by consumers, but is yet have impact on behaviors” (1996, p. 403).
12. Declarative and non-declarative long term memory

Professor of psychiatry Larry Squire and neuroscientist Zola (1996) proposed a classification of long-term memory types. This model draws on ideas from cognitive psychology, neuropsychology and neuroscience. While the exact relationship between the different memory types is a matter of debate this classification of declarative and non-declarative memory remains the dominant model for understanding the long-term memory system (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012; Baars & Gage, 2010).

Declarative memory has been studied in great detail and is believed to be explicit (conscious), whereas non declarative memory types are meant to be implicit (unconscious), however it is yet to be known if all aspects of non-declarative memory can be learned without consciousness inputs (Baars & Gage, 2010).
12.1 Declarative memory

In the neural layout, declarative memory is believed to rely on the medial temporal lobes (MTL), which contain the two hippocampi and the surrounding tissues (Baars & Gage, 2010). Declarative memory is divided into two subtypes; episodic and semantic. Episodic memory refers to memories that have a specific source in time, space and life circumstances. Very often they are autobiographical in nature in that we can mentally travel back in time to relive an experience from the past (Ibid). Episodic memories typically have reference to ourselves and are organized around a specific time period. They are susceptible to forgetting and are context dependent with respect to time, space, relationships with others and other circumstances.

Semantic memories on the other hand, are facts we know about the world, ourselves and knowledge we share with a community. Generally, semantic memories refer to a ‘feeling of knowing’ rather than a fully conscious recollection of the original event. The memories are not organized around a specific time period and are relatively independent of context. Overall they are less susceptible to forgetting than specific episodes.

For example, a semantic memory may refer to our knowledge of Vestas being a Danish wind turbine company, or the knowledge that we worked at Vestas. On the other hand an episodic memory may refer to events that we experienced whilst working at Vestas.

12.2 Declarative memory in a branding context

The connection between neural bases and basic mechanisms of branding is an area under rapid development. However, studies have demonstrated that declarative memories rely on brain regions including the hippocampus and surrounding medial temporal lobe (MTL) region, in synchrony with other brain regions such as the dorsolateral prefrontal cortex (dIPFC)\(^\text{15}\) (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012).

In a functional magnetic resonance imaging (fMRI) study by McClure and colleagues (2004) on brand-cued preference for Coca Cola vs. Pepsi, an activation of the hippocampus and the

\(^{15}\) Striatum, the ventral medial prefrontal cortex (vmPFC) and dorsolateral prefrontal cortex (dIPFC) are brain structures, which are suggested particular important when consumers evaluate predicted value of a product (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012, p. 13) e.g. how much a person thinks he would enjoy working at Vestas
dlPFC was seen parallel to the increase in preference for Coca Cola while nothing happened with Pepsi. The researchers found that the brand information (via associations) significantly influenced subjects’ expressed preference. Thus, brand preference via the conscious recall of brand associations was mediated by regions normally implicated in declarative memory (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012).

12.3 Non-declarative memory
We know from the chapters Introduction, Liking and Relevance of implicit memory that our implicit memories are meant to strongly influence our conscious thoughts and behavior. Also, that these memories cannot readily or voluntarily be recalled (Zaltman, 2003). Therefore, outlining some non-declarative memory types is necessary.

Cognitive neuroscientists Baars & Gage define implicit memory as “not accompanied by conscious awareness that one has a memory; the memory’s existence is inferred only from the effects it has on behavior” and “implicit memories may be retrieved without an intention to remember”(2010, p. 310). Non-declarative memory is divided into four subtypes; procedural memory, priming, simple classical conditioning and habituation. The most relevant for this study; procedural memory and priming is explained below. Also, the psychological phenomenon, framing, will be discussed.

Procedural memory
Procedural memory refers to sensor motor habits or automatic skills that happen largely unconsciously. Examples of the procedural memory include the ability to ride a bicycle or use our iPhone interface. Although learning how to ride the bike and learning how to send a text message from the iPhone, may involve conscious processes the repetition of it will automate the skill. This means that we unconsciously trigger the actions that enable us to bike or work the phone. In the brain basal ganglia-frontal networks are the mediators of different classes of sensorimotor learning (Baars & Gage, 2010, p. 311).
Priming

Priming is a mechanism that supports the non-declarative memory. It is believed that priming is facilitated in the neocortex. Priming occurs unconsciously and can significantly influence our conscious behavior. According to Baars & Gage priming is “the effect of a stimulus in creating readiness for a similar one” (2010, p. 310). In social psychology the term refers “to a preparedness of mental representations to serve a response function” (Bargh & Chartrand, 2000, p. 3). Social psychology research identifies three types of priming; conceptual, supraliminal and subliminal priming. These are distinguished by the degree of subjects’ awareness of the prime stimuli (e.g. during a laboratory experiment). However, further attention will not be given to this classification since the interest of this thesis is the unconscious priming which is best described by Baars & Gage (2010). They divide priming into two types; perceptual and conceptual priming.

Perceptual priming refers to a prime’s physical form or structure. For example, if you are given a long list of words to memorize and ‘Vestas’ occurs several times on the list, you will find it easier to recall ‘Vestas’ when you are later asked to identify the words from the list even if you did not consciously notice that it occurred more often than the others. Note that this has nothing to do with the semantic meaning of Vestas, but is only due to its visual presence on the list. In the brain, perceptual priming is associated with activity in the inferior temporal and extratriate cortex.

In conceptual priming, words are semantically connected such as ‘Vestas’ and ‘wind’. Words that are semantically connected are processes faster in the non-declarative memory. For example, if you casually hear ‘Vestas’ and later are asked to find a word in a seemingly random bunch of letters in which the letters; “W,” “i,” “n,” and “d” are embedded, you will probably find wind faster than any other word that may be phonetically similar. The explanation is that the prime with ‘Vestas’ has caused you to unconsciously focus on the word meaning (Zaltman, 2003). Physical change of the stimuli will therefore have little influence on conceptual priming (Baars & Gage, 2010). fMRI studies show that conceptual priming implicate semantic processing regions such as prefrontal and lateral temporal areas in the brain.
Overall, priming can be viewed as information that unconsciously changes behavior and thoughts. For researchers and marketers priming is therefore a way of tapping into general tendencies of the unconscious memory. Measurement of response time can reveal if the previous experience left a residue in memory (Ibid).

**Framing**

Framing refers to a psychological phenomenon in which people are cognitively biased by e.g. the information they receive. This means that subjects are consciously aware of an explicit stimulus but that the nature of framing can affect them unconsciously. An example is the aforementioned study by McClure and colleagues (2004). Here subjects were fully aware of the Coca Cola and consciously remember the taste of it. However they were not aware of how brand associations in memory had an effect on their brand preference. Although consciously presented to the consumer, framing provides insights to the power of non-declarative memory.

Influential work using framing by Kahneman and Tversky (1981) has challenged the Rational Agent Model which assumes “that agents make their choices in a comprehensively inclusive context, which incorporates all the relevant details of the present situation, as well as expectations about all future opportunities and risks“(Kahneman, 2006, p. 14). Their studies show how people will change their perception based on the formulation of the information they get (Kahneman, 2006). Thus, framing can manipulate associations for e.g. brands and hence our behavior and thinking. As Kahneman (Ibid) suggest: “the basic principle of framing is the passive acceptance of the formulation given. Because of this passivity, people fail to construct a canonical representation for all extensionally equivalent descriptions of a state of affairs“(p. 13).
An example of framing is a presentation of the same wind turbine in two different advertisements the one is presented with a message: “A greener world” and the other with “A disgrace to nature”.

Figure 10 Framing example

In both advertisements, viewers are consciously aware of the wind turbine and the message it holds. Viewers may not, however, be conscious of how the message may frame their preference for one cause above the other. Obviously, people may already have specific preferences for one cause over another. Nonetheless, it is interesting to consider whether this preference is preliminarily shaped by the framing in mass media, branding, or maybe by peers and friends. According to Kahneman, the power of framing is not to be underestimated; “Framing effects are not a laboratory curiosity, but a ubiquitous reality.....each frame will increase the accessibility of some responses and make other responses less likely”(Kahneman, Supplementary Readings for Lectures, 2006, p. 13).

12.4 Non-declarative memory in a branding context

In consumer behavior, goals are considered a key motivational construct that guides consumer’s decision making (Chartrand et al., 2008). Considering non-conscious goal pursuit, Chartrand and colleagues suggest that “goals can be activated by situational cues and can influence behavior outside of awareness until the desired outcome has been attained” (Chartrand, Huber, Shiv, & Tanner, 2008, p. 189). Their experiment results showed that primed retail brand names can serve as the unconscious cues that activate purchasing goals.
This finding challenges marketers’ traditional notion that mental functioning is and need to be conscious to affect brand and product choice (Ibid). For a more subtle take on the power of the unconscious memory see Simonson, 2005.

12.5 Declarative and non-declarative memory in sum

A dominant model of long-term memory categorizes memory types by declarative and non-declarative memory. This is relevant to marketers since it explains how different types of memory work and more importantly how some memories may not be consciously available. Further, framing was outlined. Although it is not a non-declarative memory type it is relevant to include since it is similar to priming and the phenomenon exemplifies that consumers’ brand associations and thereby preference may be highly manipulative. Examples from cognitive neuroscientific studies on brand preference and choice was included to provide an understanding of how the conscious and especially unconscious brand associations in memory influence behavior and brand liking.

13. A processing-based approach to memory

While the leading long-term memory model gives us an understanding of the memory types in play in a conscious and unconscious manner, a novel approach to long-term memory by professor of neuropsychology, Katharina Henke (2010) can offer an elaborated understanding of how (brand) associations work according to different memory types and thus how the marketer can use this in strategic brand management.

Henke challenges the traditional approach of distinguishing long-term memory by declarative and non-declarative types. She suggests that evidence for the role of hippocampus in conscious memory does not exclude it from also having a role in unconscious memory. Henke claims that complex cognitive mechanisms once believed to underlie only declarative memory may also be at play in non-declarative memory formation and retrieval.

If we go with this new understanding memory systems it “leaves the possibility that the engagement of the hippocampal structures reported in neuroimaging studies... is not caused
solely by conscious processes but may signify unconscious brand-related memory processes” (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012, p. 31). In other words; what once was believed to show conscious brand memory, may also show unconscious memory.

Henke suggests a memory system model based on processing modes rather than declarative and non-declarative memory types. As displayed in the figure below, this model distinguishes between three modes of memory processing; rapid encoding of flexible associations, slow encoding of rigid associations and rapid encoding of single or unitized items. The former two will be outlined subsequently.

For brand management this novel take on memory implies that preference formation for brands is not only to be understood by conscious and unconscious memory types, but also by the type of association processing that happens in the brain. The understanding that different types of memory is processed differently in the brain e.g. according to speed and flexibility of associations, will help the marketer to better target their branding efforts and thus be beneficial for building and maintaining brand equity.

13.1 Rapid encoding of flexible associations – relevance for branding

The first processing mode; Rapid encoding of flexible associations refers to fast processing capabilities via a single trail in the brain and is involved in episodic memory. Henke suggests
that this processing mode involves only a single encoding trail and enables the formation of new representations (brand knowledge in memory). Episodic memory is hippocampus dependant and truly flexible, meaning flexible to the extent that it can support prospective thinking, creative imagination and problem solving (Henke, 2010).

For branding, strategically working with the rapid encoding and flexible associations may be useful in keeping the brand alive in the consumer’s memory. For instance the rapid encoding of (new) brand associations may allow the marketer to present new and different advertising campaigns and events on a regular basis and consequently build new brand associations in consumer’s memory continuously.

The flexibility of the associations may further allow the branding collateral to take different shapes from campaign to campaign. However, rapid encoding may also indicate rapid forgetting. As aforementioned (cf. declarative memory) episodic memories are susceptible to forgetting and highly context dependant. Therefore, targeting rapid and flexible associations may primarily be effective when wanting to promote already well positioned brands, special promotions and to create short-term hype for special events.

13.2 Slow encoding of rigid associations – relevance for branding

According to Henke this processing mode “is the slow encoding of rigid associations, which enables new rigid associations over multiple learning trails, resulting in procedural memory formation, habit formation, category learning, classical conditioning and the formation of new representations in semantic memory” (Henke, 2010, p. 528).

The rigid associations are encoded at a slower pace and take several multiple learning trails. However, this type of processing mode may be useful to target in order to establish a strong position of the brand in the consumers’ memory. For example, brand managers may want to encode the user habits of a brand into the procedural memory or as a fact in semantic memory. Overall, it is highly desirable for the marketer that the brand becomes a habit or a standard knowledge for the consumer, as this will, at best, make the brand a habit or equivalent to a situation or term.
For instance, if a brand is built to involve sensor motor skills e.g. the consumer learns how to use the iPhone interface. Multiple repetitions and learning trails will enable new rigid associations to be formed about the brand. If successfully executed, the brand is stored as unconscious and automated behavior represented in procedural memory.

Further, it could be attractive for the marketer to have their brand represented in semantic memory as a ‘feeling of knowing’ e.g. Copenhagen being the capital of Denmark. For instance, Google has been successful in branding itself equivalent to online search. The same goes for the Walkman and later the Ipod that became equivalent to portable music devices. As a market leader and a well positioned brand in Denmark, Vestas may be able to brand themselves as ‘the’ wind turbine, or even as an equivalent to the term itself.

14. Theoretical summary – foundation for hypotheses

Today’s most influential brand management scholars emphasize the importance of brand associations as value creators. Brand associations are fundamental to brand liking and may be the most influential parameter to sales success in the marketplace. Accordingly, it was proposed that a large number of favorable brand associations in consumers’ memory are desirable to the brand manager. Further, the separation of conscious reason and unconscious emotions was misleading, and it is therefore suggested that the brand manager is aware of both sides of the coin.

Definitions, classifications and measurement methods revealed that the views on brand associations are rooted in a cognitive psychological understanding of memory (the associative network model). From the perspective of cognitive neuroscience a discrepancy is shown in marketers’ quest to understand what consumers may not be willing or able to report. While measuring association through indirect, yet conscious, methods they fail to see the whole picture.

By extending the current brand management understanding of consumer memory with attention to declarative and non-declarative memory types, we learned that brand associations and consumer memory may be working on a conscious and unconscious level.
Finally we learned that memory types may alternatively be classified by speed and complexity of associations. This novel classification may enable an understanding of how associations work differently in relation to different memory types. Based on this theoretical background two hypotheses will be presented in the following chapter.
15. **Hypotheses**

Based on the theory framework above, it is anticipated that there will be a general positive correlation between number of brand associations and conscious and unconscious brand liking. Consequently, with specific interest in Vestas, it is also expected that a manipulation with an increased number of brand associations will be positively reflected in conscious and unconscious brand liking. The table below shows the two main hypotheses that will be the backbone for the following experiment.

<table>
<thead>
<tr>
<th>Main hypotheses</th>
<th>Brand liking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-reported associations</strong></td>
<td><strong>Conscious</strong></td>
</tr>
<tr>
<td>$H_1 = $ There is a positive general relationship between the number of self-reported brand associations and liking (before manipulation)</td>
<td>$H_{1a} =$ There is a positive relationship between the number of self-reported brand association and conscious brand liking</td>
</tr>
<tr>
<td></td>
<td>$H_0 =$ There is no positive relationship between number of self-reported brand association and conscious brand liking</td>
</tr>
<tr>
<td><strong>Induced associations in a Vestas advertisement</strong></td>
<td><strong>Conscious</strong></td>
</tr>
<tr>
<td>$H_2 = $ There is a positive relationship between a high number of induced brand associations and liking</td>
<td>$H_{2a} =$ Seeing a high number of associations in a Vestas advertisement will increase conscious brand liking</td>
</tr>
<tr>
<td></td>
<td>$H_0 =$ Seeing a high number of associations in an Vestas ad will <em>not</em> have any effect on liking</td>
</tr>
</tbody>
</table>

Figure 12 Overview of hypotheses for the following experiment
16. Experiment design

The following experiment design was created to study the general connection between the number of brand associations on one hand and conscious and unconscious brand liking on the other hand. Furthermore, the experiment design had a special focus on measuring the possible effects of a manipulation of the number of brand associations in an advertisement for Vestas. The study was conducted in a controlled test environment at DNRG Senselab at Copenhagen Business School. This environment is designed to test human behavioral traits and neuroscientific/ psychological decision-making processes. The lab allows up to 5 people at a time to be tested.

The primary data collection was done in E-Prime, which is a Microsoft Windows based software that is used in psychological experiments. The program measures responses with milliseconds precision (Psychology Software Tools Inc., 2011). In this study E-Prime was used to collect data on conscious brand liking and Implicit Preference Task (IPT). The experiment was conducted in Danish to ensure full language understanding for the sample population.

Pretest

A pretest was run before conducting the actual test. This was done in order to avoid and correct any misunderstandings or practical obstacles that could occur during the experiment. Based on a convenience sampling method (Pole & Lampard, 2002, p. 35), two people were selected to take the test. One person did the computer test in E-Prime and the other completed the paper-based tasks. The final test was designed according to their feedback.

Subjects’ instruction

In order to test the hypotheses the sample population’s was uninformed of the entire framework for the research. Prior to participation, subjects were informed that they would take part in an experiment set to study consumer behavior among engineers.

A sample population of 40 engineers was divided into two experiment groups (20 in each). Prior to the test subjects were sent an online questionnaire (purple box). On test day,
subjects were asked to rate their liking of 14 brands (blue boxes). Subsequently, respondents were asked to do an IPT (blue boxes) to study if primed brands lead to changes in their reaction time (RT) for reporting the valence of words (Word Valence Task).

Next, subjects were shown a presentation of ten full-page advertisings. The groups saw either a low-association or a high-association Vestas employer advertisement (red boxes). A conscious liking test and IPT were conducted twice to measure difference in rating and RT. In addition three pen and paper based filler-tests were conducted (green boxes).

The primary parts of the experiment will be explained below. For more information on the filler-tests please refer to appendix 7 for details. First, I will introduce further background on the sample population. For evaluation of the quality of the measurement methods, please refer to the designated chapter.

16.1 Sample population
A sample population of 40 people, 35 men and five women, were sourced by invitation. The invitation was posted in several engineering work places, sent to professional engineering
societies and networks with members from the greater Copenhagen area. Further, by actively encouraging respondents to forward it in their personal networks. In practice, the primary part of the population signed up by reference from a colleague or friend.

The participation requirements were created accordingly to an authentic Vestas recruitment target group. The sample population consisted of Danish engineers, primarily senior professionals with more than five years of experience. 58 % of the sample population had more than nine years of experience (Appendix 8) and participants came from diverse engineering backgrounds (Appendix 9). However, a majority of them had a degree in civil engineering\textsuperscript{17}. A requirement for fluency in Danish and physically attending the test session at Copenhagen Business School located in Frederiksberg, Denmark was implied too.

16.2 Questionnaire

After accepting the invitation to participate in the test, subjects received an online questionnaire to complete before attending the experiment (Purple box). This was used for collecting background knowledge.

1. First, the questionnaire served to collect demographical information on engineering background and number of years of work experience. Also, subjects’ brand awareness of the seven best rated employer brands\textsuperscript{18} (Universum, 2011) was assessed by a five-point Likert-type scale.

2. Second, subjects were shown a brand logo and in an open field asked to report as many free associations as possible for each of the seven brands. See appendix 5 for subjects’ answers.

3. Lastly, subjects were offered to submit their contact information to participate in a draw for three sponsored prizes\textsuperscript{19}. The response rate to this pre-test questionnaire was 100 %.

\textsuperscript{17} In Danish: ‘bygningsingeniør’

\textsuperscript{18} Ranked among Danish engineering/ natural science professionals as preferred employer no. 1 Novo Nordisk, no. 2 COWI, no. 3 Rambøll, no. 4 NovoZymes, no. 5 Vestas, no. 6 H. Lundbeck, no. 7Leo Pharma

\textsuperscript{19} Vestas Wind Systems A/S sponsored an Apple IPad2 and two restaurant gift certificates. The sponsor of the prizes was not revealed until the debriefing post experiment.
16.3 Conscious liking

In E-Prime a test was designed to measure the subjects’ conscious liking of the top seven brands (Universum, 2011). Additional seven well-known brands were included as disguise for the actual purpose of the test.

The sample population was presented with 14 frames, each with a picture of the brand logo and a visual analogue scale running from ‘kan overhovedet ikke lide’ to ‘kan meget godt lide’. Subjects were instructed to indicate their liking by moving the indication marker with the mouse curser. The aim was to measure the changes that may occur from the 1st to the 2nd time the test was run. This part did not put a constraint on RT to each answer.

16.4 Unconscious liking - Implicit Preference Task

IPT was designed to measure liking of subliminally presented brand names. The IPT is an altered version of the Implicit Associations Task (IDECIDE, 2011). However, to the sample population this part of the experiment was presented as a ‘continuous concentration task’ where the aim was to measure subjects’ ability to stay concentrated while looking at the computer screen.

Practically, the test presents a brand name for 32 milliseconds, which is a priming technique that allows the researcher to present the brands on an unconscious level (Baars & Gage,

20 Disguise brands: Addidas, Coca Cola, Carlsberg, Codan, McDonalds, TDC, Toyota
21 Measuring conscious liking for Vestas before and after manipulation with associations
Visible to the subjects are only the forward and backward masking. Forward masking is a stimulus presented before target stimulus (brand name), and backwards masking is presented after. All maskings were three lines of random letters. Hereafter subjects were given a Word Valence Task in which they were asked to rate a valence word (“death” or “love”) as either negative or positive. The brand names and valence words were repeated four times, twice with positive valence words and likewise with negative valence words. In total, 28 frames were presented (four frames for each of the seven top employer brands in Denmark).

| Sweet (Positive valance word) + Vestas (brand name) | Death (negative valance word) + Vestas (brand name) |
| Beautiful (Positive valance word) + Vestas (brand name) | War (negative valance word) + Vestas(brand name) |

The response time between the backwards masking to rating of the valence word were measured to determine if any changes had occurred from before and after the manipulation (low and high association Vestas advertisement). The test focuses on the automatic of associative connections in memory (Bargh & Chartrand, 2000).

In this study it is hypothesized that a faster RT indicates an unconscious non-conflict situation, whereas a longer response time will indicate a conflict situation. This means that RT is longer if the valence word is negative, but the brand liking was implicitly positive due to number of associations in memory. The maximum response time per valance word was set to five seconds and RT was measured from time of presentation of the word to the point of response.

Figure 16 Example of valance word and brand name combination

Figure 17 Implicit Preference Task with forward/ backward masking and Word Valence Task
16.5 Low and high association advertisements
Subjects were presented with a slideshow of ten full-page advertisements. One group was shown a low association version and the other group was shown a high association version of the same advertisement. The remaining nine advertisements were identical for both groups. Each advertisement was shown for five seconds. Subjects were instructed to only observe them.

Figure 18 Low and high association Vestas employer advertisement

Figure 19 Flow of ten full-page advertisements, including either low or high association Vestas employer branding
16.6 Debriefing

Post experiment participants were debriefed and given the opportunity to ask questions. To ensure a high ethical standard (Zikmund, Babin, Carr, & Griffin, 2010) participants were informed how and why all tasks were conducted, in particular the IPT and priming were explained in detail. Further, the debriefing also served to collect subjects’ impressions of the purpose.
17. Results

The aim of this experiment was to study the general connection between number of self-reported brand associations and conscious and unconscious brand liking $H_1$. Further, to understand the effect of the induced number of associations in a Vestas employer advertisement $H_2$. In this experiment subjects were experienced engineers.

The following will present the hypotheses’ findings.

17.1 Results $H_1$

This section will present results for hypothesis $H_1$, which meant to investigate the relationship between self reported brand associations and conscious and unconscious brand liking.

$H_1 = \text{There is a positive relationship between self reported brand associations and brand liking}$

$H_{1a} = \text{There is a positive relationship between self reported brand associations and conscious brand liking}$

$H_{1b} = \text{There is a positive relationship between self reported brand associations and unconscious brand liking}$

This section will present results on general effects in the following paragraphs;

- Initial brand liking for all brands
- Initial brand awareness and number of associations as explanatory variables for liking score
- Initial conscious brand liking – regression analysis
- Initial unconscious brand liking in relation to initial conscious brand liking
- Initial unconscious – regression analysis

Initial brand liking for all brands

Initially, it is relevant to know if there is a general interconnection between brand awareness and the number of brand associations and what their collective and individual effect on
brand liking for a given brand is. To investigate this, a standard least square method was conducted.

The initial liking score (conscious liking) and initial IPT score (unconscious liking) were set as dependant variables with the number of brand associations as the independent variable and brand awareness as a covariate. First, an overall analysis was run. Then an analysis on Vestas as a separate brand was conducted.

The first step in the analysis is to find out how much the sample population initially liked the seven employer brands in relative to one another. This is crucial in order to observe if there is a difference on this score after manipulation. In obtaining the result, a one-way ANOVA test has been conducted since there was one explanatory variable (brand) to explain the response variable (brand liking) (Agresti & Franklin, 2009, p. 692). The ANOVA F=5.59, p<0.0001. The table and the figure display differences in initial brand liking for each brand.

<table>
<thead>
<tr>
<th>Level</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>COWI</td>
<td>12.6038</td>
<td>4.8050506</td>
</tr>
<tr>
<td>Leo Pharma</td>
<td>11.5800</td>
<td>4.1340953</td>
</tr>
<tr>
<td>Lundbeck</td>
<td>11.6425</td>
<td>4.5329357</td>
</tr>
<tr>
<td>Novo Nordisk</td>
<td>15.4850</td>
<td>4.5043312</td>
</tr>
<tr>
<td>Novozymes</td>
<td>13.7613</td>
<td>4.5278269</td>
</tr>
<tr>
<td>Rambøll</td>
<td>14.3875</td>
<td>0.6941046</td>
</tr>
<tr>
<td>Vestas</td>
<td>15.5463</td>
<td>4.4820638</td>
</tr>
</tbody>
</table>

Table 1 Conscious initial brand liking score
Going forward it is interesting to look at brand associations and brand awareness, and whether these explain the variation in brand liking score.

**Initial brand awareness and number of associations as explanatory variables for liking**

To test the effect of brand associations and brand awareness on brand liking, it is important to know if there is a correlation between the number of brand associations and brand awareness. If a positive correlation is found it is expected that higher brand awareness will equal a higher number of brand associations. Consequently, subjects will have more associations to a given brand if they are more aware of the brand in question.

In order to test the effect of two independent variables; brand associations and brand awareness on conscious brand liking, an F-test is conducted. It was found that $F = 24.95$ and $p > 0.001$ which means that the two variables are positively correlated. In other words, that brand associations covariates with brand awareness. This also means that the variables are interlinked and cannot be considered in isolation.

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22 F-test is used for testing effects of several predictors/regressors on the dependant variable ($y$) at once.
Table 2 ANOVA for interconnection between brand associations and brand liking

**Initial conscious brand liking - regression analysis**

To test if there is a correlation between the three variables; brand associations, brand awareness and brand liking. Here, a regression analysis is used to investigate if the level of brand awareness and the number of brand associations for a given brand can explain the observed variation in brand liking. In order to test the effect of two independent variables; brand associations and brand awareness on conscious brand liking, an ANOVA F-test is conducted.

*Regression model: Conscious brand liking = brand associations + brand awareness*

F= 20.67, p<0.001, Adjusted R² =0.123

This model shows a significant correlation between the number of brand associations and brand awareness in relation to conscious brand liking. Therefore at least 12.3 % of the variation in conscious brand liking score can be explained with the model above. In other words, conscious brand liking is dependent on brand associations and the level of brand awareness.

| Term          | Estimate | Std Error | t Ratio | Prob>|t| |
|---------------|----------|-----------|---------|------|------|
| Intercept     | 8.8832175| 0.834042  | 10.65   | <.0001*|
| Number of associations | 0.3210215| 0.085169  | 3.77    | 0.0002*|
| brand awareness | 0.9930712| 0.254097  | 3.91    | 0.0001*|

*= the result is significant with a p-value lower than 0.05 (*) = the result is not significant, but shows a statistical trend

Table 3 Independent variables effects on conscious brand liking

Further, a significant effect was also found between the number of brand associations and the brand liking score alone even when controlling for the effect of brand awareness. The
opposite effect was also found; that brand awareness had an effect on the brand liking score which was not due to the number of associations. This shows that both variables each have a separate effect on the level of brand liking and that H1a can be confirmed.

**Initial unconscious brand liking in relation to initial conscious brand liking**

With knowledge of the initial conscious brand liking, it is interesting to see if there is any difference in the findings for unconscious brand liking. The table and the figure below shows that the sample populations’ initial unconscious brand liking score (IPT) differ quite from the results on the initial conscious brand liking score. The initial conscious Vestas score was 15.54, whereas the Vestas result for initial unconscious brand liking is 0.99.

<table>
<thead>
<tr>
<th>Level</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>COWI</td>
<td>1.0142545</td>
<td>0.2544018</td>
</tr>
<tr>
<td>Leo Pharma</td>
<td>1.2298099</td>
<td>0.3989986</td>
</tr>
<tr>
<td>Lundbeck</td>
<td>0.9688153</td>
<td>0.2798576</td>
</tr>
<tr>
<td>Novo Nordisk</td>
<td>1.0813223</td>
<td>0.2780295</td>
</tr>
<tr>
<td>Novozymes</td>
<td>0.9385633</td>
<td>0.3752268</td>
</tr>
<tr>
<td>Rambøll</td>
<td>0.8273851</td>
<td>0.2754885</td>
</tr>
<tr>
<td>Vestas</td>
<td>0.9906189</td>
<td>0.281174</td>
</tr>
</tbody>
</table>

Table 4 Unconscious initial brand liking score

23 To measure unconscious brand liking, a net effect score was calculated:

Unconscious liking score = reaction time and negative valence word – reaction time and positive valence word. This implies that a higher score means higher unconscious brand liking. E.g. If the subjects feel negative towards the brand they are being primed with their RT will be longer when they have to respond to a positive valence word and vice versa.
At this point it is relevant to investigate if there is a connection between the initial conscious brand liking and the initial unconscious brand liking. With an $F=3.23$, $p=0.073$ the result is that there is no significant correlation between the two variables.
Initial unconscious brand liking - regression analysis

For unconscious brand liking a similar analysis is run to examine if there is a correlation between the three variables; brand associations, brand awareness and brand liking. A regression analysis is used to investigate whether the level of brand awareness and the number of associations can explain the observed variation in unconscious liking.

Regression model: Unconscious brand liking = brand associations + brand awareness

F= 2.23, p<0.109, Adjusted R² =0.009

In this model no connection between the number of brand associations and brand awareness on unconscious brand liking is found.

| Term                  | Estimate  | Std Error | t Ratio | Prob>|t| |
|-----------------------|-----------|-----------|---------|-----|
| Intercept             | 1.1053757 | 0.061947  | 17.84   | <.0001* |
| Number of associations | 0.005598  | 0.006326  | 0.88    | 0.3769 |
| brand awareness       | -0.039469 | 0.018873  | -2.09   | 0.0374* |

Table 5 Independent variables effects on unconscious brand liking

Contradictory to the conscious brand liking regression findings, this model shows no effect of the number of association on unconscious brand liking. However, an effect was found on the connection between brand awareness and unconscious brand liking. Therefore, on an unconscious level brand liking is connected to the level of brand awareness but not the number of associations that subjects’ have for a given brand. This finding shows that H1b must be rejected.
17.2 Results $H_2$

As outlined earlier, $H_2$ was set to examine the effect of a high induced number of associations for a Vestas employer advertisement on brand liking. The results focus on Vestas since this brand is used for exemplification.

$H_2 = \text{There is a positive relationship between a high number of induced brand associations and liking}$

$H_{2a} = \text{Seeing a high number of associations in a Vestas advertisement will increase conscious brand liking}$

$H_{2b} = \text{Seeing a high number of associations in a Vestas advertisement will increase unconscious brand liking}$

The results are found by comparing the initial brand liking score to the post manipulation brand liking score.

**Conscious and unconscious difference score**

Difference scores were calculated to evaluate $H_2$ for conscious and unconscious brand liking. These scores are subtractions of brand liking scores, before and after manipulation. The results are used in one-sample t-tests for each test group (induction with either low or high number of associations) and levels of consciousness.

*Conscious brand liking difference score* = initial brand liking score – post manipulation brand liking score

*Unconscious brand liking difference score* = initial brand liking score – post manipulation brand liking score
One sample t-test results

To understand the effects of the manipulation a one sample t-test was deployed. A t-test is useful when comparing two means. I.e. initial brand liking and post manipulation brand liking. The table shows the results.

<table>
<thead>
<tr>
<th>Test</th>
<th>Brand</th>
<th>Liking score before</th>
<th>Brand associations</th>
<th>Liking score after</th>
<th>t-value</th>
<th>p-value, two-tailed</th>
<th>p-value, one-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-brand liking</td>
<td>Vestas</td>
<td>15,55</td>
<td>Low</td>
<td>14,07</td>
<td>-3.0</td>
<td>0.0072*</td>
<td>0.0036*</td>
</tr>
<tr>
<td>UC-brand liking</td>
<td>Vestas</td>
<td>0,99</td>
<td>Low</td>
<td>1,03</td>
<td>-0.21</td>
<td>0.84</td>
<td>0.417</td>
</tr>
<tr>
<td>C-brand liking</td>
<td>Vestas</td>
<td>15,55</td>
<td>High</td>
<td>14,01</td>
<td>-1.67</td>
<td>0.11</td>
<td>0.056(*)</td>
</tr>
<tr>
<td>UC-brand liking</td>
<td>Vestas</td>
<td>0,99</td>
<td>High</td>
<td>1,05</td>
<td>2.62</td>
<td>0.0169*</td>
<td>0.0085*</td>
</tr>
</tbody>
</table>

*= the result is significant with a p-value lower than 0.05 (*) = the result is not significant, but shows a statistical trend

Table 6 t-test results

Conscious liking

On a conscious level, H_{2a} must be rejected. At first glance a high number of brand associations lead to a decrease in conscious brand liking. However, the result was not significant but a statistical trend was discovered (p-value 0.056). The low number of brand associations confirms a negative effect on conscious brand liking with statically significance (p-value 0.0036).
Unconscious liking

A low number of associations has no effect on unconscious brand liking. Nonetheless, the emotional response to a high number of associations results in a significantly positive effect on unconscious brand liking. The brand liking increases significantly after subjects have seen the high association Vestas employer advertisement. Thus $H_{2b}$ can be confirmed.

Figure 23 Brand liking comparison

Overall, the table and figure above show that the number of induced brand associations has different effects on conscious and unconscious brand liking.

A high number of brand associations have a negative effect on conscious brand liking. Consequently, we can reject the hypothesis $H_{2a}$.

Unconscious brand liking, on the other hand, show a significant positive effect of a high number of brand associations and we can support $H_{2b}$.  

60
18. Discussion of the experiment results

The aim of this study was to investigate the relationship between brand associations and the conscious and unconscious sides of brand liking. The study mainly focused on the possible effects for Vestas brand liking. However, a general foundation had to be established first to understand the latter Vestas specific results. The general foundation was stated in hypotheses H1a and b and the expected conscious and unconscious effects for Vestas brand liking were stated in subsequent hypotheses H2a and b.

The most important findings concerned the changes in Vestas brand liking when the number of brand associations was manipulated in a Vestas advertisement. A high number of brand associations had a negative effect on conscious liking, thus H2a was rejected.

For unconscious liking, a high number of associations had a significant positive effect and H2b could be supported.

In the following possible reasons for these changes in Vestas brand liking are discussed. However, while the findings for H2a and b are of utmost interest to this thesis, it is equally relevant to discuss them in the light of findings from H1a and b.

19. Discussion of H1 results

First, we studied the relationship between associations and preference before any manipulation. The relationship was assessed through self-reported brand associations and brand preference rating in a pre-experiment survey. This was deployed in the first hypothesis H1 that concerned the general relationship between the number of associations and preference for a brand.

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24 H1 = There is a positive general relationship between the number of self-reported brand associations and liking (before manipulation). H1a = Relationship to conscious liking, H1b = Relationship to unconscious liking.

25 H2 = There is a positive relationship between a high number of induced brand associations and liking. H2a = Changes in unconscious liking, H2b = Changes in unconscious liking.
Further the hypothesis was split to investigate the conscious (H1a) and unconscious (H1b) part of liking. The a priori expectation was that there would be a positive linear relationship between the number of associations and subjective liking score for a particular brand. This was only partly confirmed by the results showing that H1a could be supported, whereas H1b was rejected.

For H1a this means that we can expect a positive relationship between the number of associations and conscious liking. This finding indicates that Aaker’s suggested importance of a high number of brand associations for brand equity (1991) is also seen in liking. In addition, it can be implied that the dominant marketing way of thinking brand associations as crucial for brand preference is applicable. Nonetheless, it takes more research to determine if it is an actual number or as tested a high or a low number of associations that makes the difference.

H1b was rejected. Results showed that the number of self-reported brand associations does not have a positive correlation with unconscious liking. This implies that we are dealing with two different memory systems, and that consumers’ preferences can therefore be dealt with on both levels of awareness. This correlates to the introductory arguments made by cognitive neuroscientists (Chartrand et al., 2008; Dijksterhuis et al., 2005). The finding also supports the importance of understanding consumer preference as a sign of an underlying emotional state (Gordon, 2001).
20. Discussion of H2 results

In H2 we studied the relationship between the number of brand associations and liking by focusing on the effects of induced differences in the number of associations to Vestas and its effect on brand preference. This was conducted by the crucial advertisement; subjects either saw a version with many or few associations. By analyzing the effects of this manipulation we rejected the H2a hypothesis on conscious liking and could support H2b for unconscious liking. Again this finding supports the theoretical argument that we can deal with preference on two levels of awareness. The split findings will be discussed further below.

20.1 H2a – Conscious effect

By analyzing the effect of the manipulation on overt liking with a one sample t-test, we find that there is no significant effect of the manipulation using a standard statistical threshold (p-value of 0.056). Although the hypothesis was rejected; we do find a statistical trend. According to the initial finding of a significant general correlation between the number of brand associations and brand liking (H1a), it was expected that the manipulation of a high number of brand associations in a Vestas advertisement would lead to an increase in subjects’ conscious brand liking. It was therefore surprising to see that hypothesis H2a was rejected. In the following, possible explanations for this are discussed.

Distinction between low and high association groups

To interpret and discuss this result it is crucial to distinguish between the two experiment groups, as the one was induced with a low association manipulation and the other was induced with a high association manipulation.

No effect with low associations

Results for the low association group showed a significant lower brand liking for Vestas after manipulation (p-value 0.0036). Therefore it can be expected that respondents will rate Vestas brand liking lower after seeing a low association manipulation.
Ease of negative effect with high associations

In the results for the high associations group, we found a statistical trend (p-value of 0.056). While the result is not significant but only depicts a tendency this may indicate that a high number of brand associations will ease the overall negative brand liking. This interpretation is to be seen in comparison with the significant negative effect (p-value of 0.0036) that was found in subjects after they had seen a low association manipulation. This was also suggested in the theoretical claim made earlier in this work; that a high number of brand associations in memory are positive for conscious brand liking because a large number of brand associations makes it easier to access a particular brand note in memory - in this case Vestas (Krishnan, 1996, p. 392).

Difference in effects for low and high number manipulation

The negative statistical trend for using few associations was an unexpected finding and, to my knowledge, not proceeded by prior studies. The fact that an advertisement with few associations can have a negative impact on preference (while leaving the high-association version of the ad relatively unaffected) cannot be understood using established theories such as the mere exposure effect (Fang, Singh, & Ahluwalia, 2007). There are two possible explanations. On the one hand, the mere exposure has a negative impact, but a high number of associations can ease this effect. On the other hand, that few associations yield a negative effect and a high number have no impact. With the current data in hand it is unknown which of the explanations are most likely to be true.

The finding reveals a limitation to this experiment. Since the results cannot be compared to a control group the only certainty is that there is a relative difference between the effects for the two groups. Further, the time span between pre-test and post manipulation rating is restricted to minutes, which does not allow much time for any consideration (or changes in preference). As a consequence, this finding warrants further studies.

Initial ceiling effect on brand liking

From the initial brand liking scores assessed in H1 we know that Vestas was ranked the highest with a 15.56 mean (on a scale from 0-20). This initial top score may have created a
ceiling effect\textsuperscript{26} and can possibly explain why the subjects did not reach a higher score post
manipulation. In this case a ceiling effect would not cause the subjects to rate Vestas higher
after being manipulated simply because the rating ‘cannot get any higher’. This should then
result in the rating of Vestas after manipulation with a high number of associations to be the
exact same as prior to the manipulation. It is important to remember that we found a
statistical trend (p-value of 0.056) and we therefore cannot confirm that a change has
occurred. Effectively, a ceiling effect might have been a prevalent.

Also, one can picture that a positive effect from manipulation with many associations would
have occurred, if this study had been conducted on a brand, which did not have an initial
high brand liking score. For this reason it would be interesting to conduct the same analysis
on e.g. Leo Pharma, who had the lowest conscious brand liking score and compare the
results. While this is beyond the scope of this study, it could be a relevant follow-up study to
the findings of this paper.

\textbf{Issue of consistency}

Other reasons for the rejection of H\textsubscript{2a} may be found in the debriefing after the experiment.
In this, almost all subjects expressed a ‘difficulty’ to be consistent with their answers. This
intention may have influenced the results. It is an option that the subjects’ wish to provide
consistent answers may overrule answers that might reflect an actual (changed) attitude
towards the brand. However, in this experiment the possible issue of consistency was sought
avoided by deploying a visual analogue scale that makes it difficult to replicate answers and
thus sustain the quality of the data.

Further, post manipulation brand liking scores did in fact change. One can argue that in an
attempt to reproduce the exact same answer twice subjects tend be less positive at the risk
of over rating their Vestas liking. This means that the observed negative trend may be
explained by respondents’ attempt replicate their prior answers.

\textsuperscript{26} Ceiling effect Example: A memory test that assesses how many words a participant can recall has a total of
five words that each participant is asked to remember. Because most individuals can remember all five words,
this measure has a ceiling effect (McGill University, 2011).
Preference consistency

An alternative explanation can be found in the consistency of preference (Lee, Amir, & Ariely, 2009). Preference consistency is a cornerstone in marketing that markers rely their consumer forecasts and predictions on. It is assumed that consumers have constant preferences that do not change over time. As outlined in the theory framework this claim is rooted in the views of the consumer as a rational man (c.f. Brand liking). In the vein of this understanding, results can be explained by subjects’ consistent preference for Vestas. Put differently, that subjects are simply inferior to any change in their subjective liking. However this understanding is challenged by the results for H2b with a change in emotional preference. Further, a study shows that emotions are the best predictors of consistent preference and behavior (Lee, Amir, & Ariely, 2009). In sum, this may reveal the limitations to cognitive decision making model and the reliance on conscious memory.

Issue of resistance

Another limitation to this study concerns the issue of resistance. A respondent’s awareness of being in a test situation may have brought out a resistance to reveal any actual effects of the manipulation. Although subjects were not made aware of Vestas being the brand of interest, several respondents reported in the debriefing that they had figured out the purpose of the test. It is possible that this knowledge may have caused respondents to resist any possible effect of the manipulation with a high number of brand associations and could cause them to intentionally like the brand less when asked the second time. This phenomenon is what Aaker (1991) refer to as the issue of privacy and unwillingness to share personal information. This is a common pitfall to traditional marketing research and as a consequence this resistance can yield results that do not correspond to actual attitude or change in behavior. So while the quality of data was sustained by deploying a visual analogue scale, the results may only display subjects’ own agendas. This claim is applicable to the before-mentioned phrase “what people say is not what they do” (Gordon, 2001, p. 281).
20.2 H$_{2b}$ – Unconscious effect
The results for unconscious brand preference H$_{2b}$ showed that a high number of brand associations had a strong effect on liking (p-value of 0.0085). The following section entails a discussion on how the finding is supported and challenged in the results for the hypotheses and theory framework.

Difference in initial conscious and unconscious brand liking
As assessed in hypothesis H$_1$ Vestas was the consciously best liked brand. However, the initial unconscious score placed Vestas as number five out of seven brands with a 0.9906 mean$^{27}$. The difference in liking scores may be related to different conscious and unconscious motivations and goals when seeing the brand. As discussed earlier goals are a key motivational construct for decision making (cf. non-declarative memory in a branding context). However, if the respondents may not be looking for a new job, they may not have any motivation to have an unconscious and emotional initial attitude towards Vestas (Solomon, Marchall, & Stuart, 2009). On the other hand, the high conscious brand liking for Vestas may be explained with a socially inferred expectation of preference for Vestas. In other words, subjects may like Vestas just because other people do (Aaker, 1991).

Prior awareness in relation to unconscious liking
In the initial regression analysis we saw that initial unconscious liking was correlated to awareness but not to the number of self-reported brand associations. First, this can be explained by the fact that self-reported brand associations are a conscious matter (Christensen, 2002). Following, in this part of the experiment it could be expected that the brand associations would have no connection to brand liking.

Nonetheless, prior awareness of Vestas, which is generally high among Danish engineers (Universum, 2011), may explain that liking even exists for the sample population. One can only guess if respondents with little or no awareness of the brand would initially rate Vestas even lower.

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$^{27}$ On a before range from 0.21 to 2.383
Power of framing

The results revealed that a high number of brand associations increased unconscious Vestas brand liking. This supports framing as a powerful way of manipulating preference. In the present experiment a high number of induced brand associations seem successful in framing subjects with a higher number of associations in memory and thus shaping the increased Vestas liking. This claim is supported in the comparison to subjects who saw a low number of associations which did not have any significant effect on liking. Thus, it can be derived that the accessibility to brand associations can be increased by framing as also identified by Kahneman (2006).

21. Evaluation of experiment quality

21.1 Reliability

Consistency is a key criterion for the reliability of the data collected. For instance consistency of the test results can be revealed by a test-retest method, which will determine whether a repetition of the experiment, with the same sample population, will yield similar results if conducted again at a later time (Zikmund, Babin, Carr, & Griffin, 2010, p. 306). The experiment design for this study would be highly replicable as all parts of it have been standardized and are easy to redo.

In a traditional brand management approach where preference consistency is a key assumption this gives reason to believe that a retest would produce the same results and reliability of the method is overall high. However if preference is to change over time, reliability is limited to the time frame the test was conducted in. Reliability is essential for validity but not a sufficient condition for validity (Ibid). This is further discussed below.

21.2 Validity

An important criterion for validity of the experimental study is accuracy. This means that the only difference between the experiment groups should be the controlled difference in the treatment of them (Gorard, 2003). However a number of factors can possibly affect the validity of data results. The most relevant to this study are outlined below.

Demand characteristics
A demand characteristic refers to an element or procedures in the experimental design that unintentionally provides the subjects with hints about the research hypothesis. Once the subjects are aware of the hypothesis they will be likely to answer what they think is correct and it is unlikely they will respond naturally and unbiased. (Zikmund et al., 2010) As we saw earlier in the results discussion, some subjects reported that they had figured it out. This may yield resistance due to privacy issues and cause respondents to intentionally provide false answers (Aaker, 1991). Overall, this is a threat to the validity of the results for conscious liking. However, validity for unconscious liking results can be regarded high since the IPT make respondents rate their liking non-consciously.

A common risk to all experiments is termed the Hawtorne effect28. This refers to the phenomenon that simply taking part in an experiment can affect participants’ behavior. The sense of being tested may enforce a certain behavior and response which shows an effect. “This suggests that participants in experiments may be sensitive to almost any variation in treatment for a short time” (Gorard, 2003, p. 165). If this is the case, the effect is not to be understood as fully valid for the participants’ usual behavior as the response to the test may just be a course of the experiment itself and “may be very difficult to control for in a snapshot design” (Ibid), such as this thesis’ study.

A related threat to validity is the risk of experimenter effects or experimenter bias, in which participants are sensitive to researchers’ expected outcome of the experiment. Subjects may be able to sense the frisson of excitement when the expected answer is given. This is often infused by the person(s) administrating the experiment, who in the case of this study was, the researcher and a research assistant. In this study, the risk of an ‘experimenter effect’ (Ibid) has been accounted for and sought to be avoided by the number of efforts outlined below.

To ensure an absolute minimum of demand characteristics in this study, an experimental disguise was deployed throughout the whole experiment design (Zikmund et al., 2010). Prior to participation and test, the subjects were not fully informed about the purpose of neither

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28 The Hawtorne effect is named after celebrated studies of workplace behavior conducted in the 1920’ies and 1930’ies at the Western Electric’s Hawthorne Plant (Jones, 1992)
the experiment nor the actual research question. Instead they were informed that they would participate in a cognitive neuroscience research study on consumer behavior of highly educated people.

Also, an administrator’s manuscript was followed throughout the entire interaction with the respondents. This was enforced to make sure that all subjects were given the exact same instructions and secure that the purpose of the research would not be revealed. In the conscious liking test, seven additional brands were added for disguise of the purpose. For further disguise, three additional filler-tests were included in the research design. Subjects were not informed that these filler-tests only served to disguise the testing of Vestas liking, but were instructed to take all tests as equal parts of a full test program. All the above mentioned initiatives served to reduce any risk of demand characteristics (Zikmund et al., 2010).

Selection validity

Selection validity of experiment participants is depends on how representative the sample population is. As this study had a number of participant requirements (reflecting an actual Vestas target group with high awareness of the brand) this could be a possible source of population contamination and biased results. This was accounted for by a randomization of the subjects’ allocation into either of the two experiment groups (Gorard, 2003, p. 167).

Respondents were sourced via engineering workplaces and subjects’ social networks. This type of non-probability sampling is termed snowball sampling (Pole & Lampard, 2002) and can be problematic if the aim is to generalize from a sample to a greater population and “can exclude those types of people who are not tied into social networks” (Ibid p. 36)

However, as Vestas is strategically working with its employees’ social networks in order to attract new staff the results is expected to show a realistic picture of implications for the current brand management. Further, this form of sampling is considered valid as the overall purpose of this experiment is to serve as a pilot project for further academic investigation.

Finally, unconscious liking results showed significant effects from simple manipulation. Given the unawareness of this test and the strong effects found on a relatively small sample,
similar effects would be expected in a larger sample population. In the exploratory nature of this study this can be regarded valid (Ibid).

**Ecological validity**

Also ecological validity is relevant to discuss as the experiment was conducted in a controlled lab environment and this is not where subjects usually would play out their daily life. Hence it is relevant to ask if the same scientific results would appear in different settings. Proponents of the ecological approach argue that human behavior is contextual and influenced by individual, cultural and social factors. Thus data, generated in the isolated and artificial nature of laboratory experiments are invalid to explain real life behavior (Christensen, 2002). While the classical cognitive school and experimental psychology widely uses and accepts the laboratory tests, the ecological approach suggests that the results must be validated by field experiments.

If so, the choice between laboratory tests and field studies is a tradeoff between control and realism which must be taken into account. It should be noted that the ecological approach to cognitive psychology is part of a paradigm shift that has lead this area closer to the constructivist approach to psychology. However, this study takes a positivistic approach to cognitive neuroscience and experimental psychology and is concentrated on understanding basic aspects of preferences/brand liking. For further research on the topic it could be interesting to test the hypothesis in the field e.g. in a setting were career choices are influenced.

**21.3 Sensitivity**

Sensitivity of the measurement method is another decisive factor for the quality of data collection. Especially in the kind of study that is concerning the measurement of a possible change in attitude based on a manipulation (Zikmund, Babin, Carr, & Griffin, 2010, p. 309). Conscious brand liking was measured on a highly sensitive scale with just two predefined bipolar categories (Visual Analogue Scale) – running from ‘Kan overhovedet ikke lide’ to ‘Kan meget godt lide’ and no further fixed categories, which would make it very hard for subjects to be consistent in their answers (demand characteristics) and allow for subtle recording of their conscious brand liking. Further, to measure unconscious brand liking, reaction time was
recorded in milliseconds. Thus, sensitivity and accuracy of both measurement methods may be considered very high.

22. General discussion
The aim for this study was to examine how brand associations affect conscious and unconscious brand liking. The research question was inspired by how Vestas operationalize the dominant understanding and approach to influencing consumer mindsets. Based on the test of 40 senior engineers results showed that brand associations affect liking in different ways. This depended on low or high numbers of brand associations in a manipulated advertisement and the level of awareness. Based on the evaluation of measurement methods and the fact that it takes more research to determine the exact relationship between the number of associations and liking, a discussion on what can be learned from the present findings in relation to the theory framework will be outlined.

Consumer memory – consumer as a cognitive decision maker

The brand management theory predicted that a high number of brand associations would be positively related to conscious liking. Nonetheless, results for conscious liking showed a relatively negative effect. Therefore, in relation to theory, Aaker may not be right in his assumption that there is a positive relationship between a high number of associations and subjectively expressed liking (1991).

Further on a meta level, experiment results reveal some crucial limitations to the dominant way of understanding consumers’ memory. While Aaker (1991) and Keller (1993; 2008) suggest the importance of brand associations in relation to brand liking and equity, they fail to see the consumer as more than a cognitive decision maker who presumably make deliberate and conscious choices. Limitations to this theoretical view were found with the different initial conscious and unconscious liking and also how a high number of brand associations affect this. Thus, the approach to brand associations as a cognitive construct in mind is limited to what may just be the top of the iceberg.

The findings suggest that brand associations may affect brand liking on both the conscious and unconscious side of awareness.
Mere exposure effect

While many advertisers (rooted in the dominant brand management approach) rely on a mere exposure effect test result showed no indication of increased liking based on repeatedly showing the Vestas advertisement. Instead findings suggest that a positive effect is caused by how many associations people remember after seeing the (high association) advertisement the second time. This finding may provide some important aspects to why a repetition may direct a positive attitude. In other words that it may not be the repetition itself that makes a difference but rather how the message is presented in terms of e.g. framing. This suggestion finds strong support in Fang, Singh & Ahluwla’s (2007) distinction between cognitive and affective perspectives on mere exposure effects.

Declarative and non-declarative memory

The diverging test results do indeed support the claim that consumers can be understood from cognitive neuroscience perspective in which both explicit and implicit memory types are taken into consideration.

The importance of recognizing the unconscious emotions as main drivers for consumer behavior was supported by a number of studies e.g. Dijksterhuis et al. (2005), Berridge & Winkielman (2003) and Chartrand et al. (2008). However, this also calls for further research to examine whether the induced Vestas liking lead to (un)consciously driven purchasing behavior.

While it was argued that decisions can be made completely unconscious, it may be unlikely that career choices will be made without any conscious awareness. Instead it can be hypothesized that such decisions will be based on what is theorized as affective decision making (Arnould, Price, & Zinkhan, 2005) or intuition (Kahneman, 2006) which equally suggests emotions as main triggers for making a choice. This puts serious pressure on the foundations of the economic man. Again this cannot be justified by the present results but deserves more research.

Nonetheless, given the aforementioned claim that 95 % of the brain’s activity happens under the threshold of consciousness (Gordon, 2001) Vestas’ low unconscious brand liking is very
problematic. This issue is clear since emotions are crucial to decision making and thus also brand equity.

A limitation to Squire & Zola’s (1996) distinction between declarative and non-declarative memory systems is that it fall short in explaining how associations work according to the different memory types. Consequently, this theory fails to explain why a high number of brand associations affects unconscious, but not conscious liking.

**Processing modes**

The experiment was based on the understanding that consumer memory is a network (Keller, 2008) which further can be divided into explicit and implicit as proposed by Squire and Zola (1996). However, a limitation to this choice is found in the fact that neither the brand management memory categorization nor the declarative/non-declarative memory approach offers any concrete understanding of how brand associations work in relation to brand liking.

In this light, Henke (2010) may offer a better perspective. In her novel model of memory systems distinguished by processing modes, we learn how brand associations are encoded into memory. She recognizes the existence of conscious and unconscious memory types. However, the current understanding of conscious memories being connected to hippocampus is indirectly challenged in her categorization as recent studies demonstrate that the MTL regions are also involved in implicit memory functions (Grunwald, et al., 2003; Noulhiane et al., 2007; see Henke, 2010 for review).

Henke’s perspective offers us an alternative and easier way of understanding the present findings. Results for H1 may be showing to what degree subjects’ possesses slow and rigid encoded associations for Vestas in memory, whereas H2 findings may show how associations can be encoded in a rapid and flexible manner into memory. Again, the restricted time span in which this experiment was conducted does not allow us to determine if the fast encoding will lead to more long lasting slow encodings.

Further, in light of her novel distinctions we may understand how results for what we regarded as conscious liking, cannot be excluded from also revealing unconscious processes.
While it is intriguing to draw a parallel to present experiment findings it takes more research to determine the possible link.

**Complexity an alternative explanation for preference**

Repetition is just one of many variables that may influence liking. Another relevant explanation is aesthetic preference. Much of the research on consumers’ aesthetic preferences is influenced by the work of late Professor of psychology, Daniel Berlyne (with Lawrence, 1964; 1968; 1970). “Aesthetic preference is related to a stimulus’s arousal potential in a inverted-U shaped pattern, in which most preferred stimuli are those which are moderately novel and complex, and therefore moderately arousing. In contrast, Berlyne’s research suggests, subjects tend to dislike stimuli that are either too simple and familiar (which elicit a negative “tedium” response) or too complex and novel (which raises subjects’ arousal beyond the optimal, preferred level)” (Cox & Cox, 1994)

To find out if either of the two Vestas advertisements had an embedded aesthetic preference and if this could explain liking one over the other I conducted a small face-to-face survey. 10 convenience sampled respondents, 5 female and 5 male were presented with both advertisements next to each other and asked: “Which one do you like the most?” 7 out of 10 people responded that they liked the low association Vestas advertisement the most. Out of these 5 were female and 2 male. This result may indicate that what people consciously find the most attractive does not correspond to implicit preference. Also, this yields for more research to understand the relationship between the complexity of the advertisements and liking.

**Inconsistency between research studies with the same purpose**

Finally, it is interesting to note that the initial conscious brand liking of the seven (employer) brands in this experiment, do not correspond to the Universum ranking (2011) of top employer brand in Denmark although the presented brands and target group were the same. In this present study Vestas was rated as the most liked brand, whereas in the

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29 Preference may be formed by many variables. For instance, inherent properties may induce automatic attraction or aversion e.g. sucrose is attractive virtually at birth. Classical and operational conditioning may induce preference for certain objects, sounds ect. (Zajonc, 2001)
Universum ranking of ideal employers, Vestas was rated number five. This reveals an overall inconsistency between rankings. This could be explained by the fact that this study is concentrated on general brand liking and not explicitly asking subjects to rate the brands as an employer. Also, this study’s sample population is much narrower in size and geography, than the Universum questionnaire research with thousands of respondents from all over Denmark. However, while not comparable in sample population and approach, the diverging results may indicate the challenges of using one method over the other. Gorad argues “questionnaires are generally inferior as a design compared with experiments, and are primarily useful for gathering relative simple facts” (2003, p. 90).

22.1 Implications for brand management
Considering the theory review and the results it is important to ask: what are the implications for brand managers and why should they care?

Unconscious memory in marketing research

Overall, the results indicate that consumers’ preference may be dealt with on two levels of conscious awareness. Also, given that hippocampal brain structures may not only be important for conscious memory types, studies on brand preference related to brand associations in declarative memory may also involve unconscious brand associations and memory processes. This means that it is highly relevant to consider unconscious memory in brand preference research. For brand managers this implies that the current understanding of the consumer as a cognitive decision maker must be revised to include the unconscious emotional aspect too.

This account is supported in studies by Ramzøy and colleagues (2011) which have shown “that emotional components of the associative network related to a brand can be triggered unconsciously and affect subsequent emotional processing and preference” (Plassmann, Ramsøy, & Milosavljevic, Forthcoming 2012, p. 32)

In practice this means that to understand brand associations in memory, measurement methods that allow assessment of implicit memory must be deployed. For instance,
biomarker tools which can track pupil dilation, galvanic skin response and recognizes facial affects may be useful for measuring emotional affects on branding.

**Marketing execution**

Learning about emotional responses, what creates them and how they can be build may be useful in order to produce advertising that creates some form of response (Hansen & Christensen, 2007). For instance, if marketers understand the nature of priming they can effectively promote their brand through links between associations. Arnould, Price, & Zinkhan(2005) provides a good example: The ‘got milk’ campaign primed consumers appetite for milk by promoting products that go with milk, such as cookies, cereals and asked got milk?

**Strategically targeting processing-based memory**

Brand managers can learn useful insights from Henke’s(2010) processing based memory model. Understanding the neural differences in memory processing modes and that associations vary in speed and complexity may be of great use in strategic brand management.

Working strategically with rapid encoding of flexible associations may be useful when launching new campaigns for already established brands. The nature of this processing mode allows the marketer to keep the brand dynamic and alive in the sense that new associations may be created to sustain a market position or promote brand hype in the consumer’s episodic memory. However, to some extend rapid encoding may also mean rapid forgetting. Thus targeting this type of encoding may not be the best way to strengthen the brand in consumer memory – especially not for a new brand. Given the fragile nature of this type of encoding it is peculiar knowing that most of today’s branding rely its efforts on this via print/web advertisement and TV commercials.

Opposite, the processing mode slow encoding of rigid associations may take longer time and more efforts to pass the threshold for entering the procedural and semantic memory. While it takes considerable more effort to encode a brand in these memory types, the outcome seem worth the effort. Ideally the execution targets both the rapid and flexible encoded
associations (brand/product) and the slow rigid encoded associations (how) to use the brand or product, for instance, how (procedural learning) to transport oneself on a Segway (brand).

22.2 Perspectives for further research
The aim of this experiment was to understand how brand associations affect conscious and unconscious brand liking. The findings provide an elaborate understanding of consumers’ memory systems which is not reflected in widely used brand management theories and practices. Nonetheless, this thesis’ experiment was conducted with rather simplified variables (low or high number manipulation of brand associations) and a strictly sourced sample population.

Since this choice has some limitations it is relevant to conduct further research to establish the exact nature of the relationship between brand associations and liking. In addition to extend the understanding to how this may influence later choice. The following sections will therefore outline some ideas that can help clarify our current understandings.

Valence of brand associations
It is interesting to consider if the results of the present experiment may have been more nuanced if the valence of the self-reported brand associations were taken into consideration. Krishnan (1996) did a study on the valence of brand associations as indicators of low or high brand equity. It was found that a high valence net, positive minus negative brand associations for each brand, was an important indicator of high brand equity. In that light it would be relevant to include the valence of brand associations as a variable for further research. Also, as purposed by Keller (2008) uniqueness and strength of the brand associations could be beneficial to assess.

Number of brand associations
Another idea for future research is counting the numbers of self-reported brand associations before and after the test. Would this number be increased post manipulation and how would this effect liking? Also, for unconsciously framed brand associations did the framing with a low/high number of brand associations yield more self-reported associations? Finally, it would be interesting to divide subjects into a control group seeing none and experiment
groups seeing e.g. five, ten and 15 induced associations. Would this reveal an ideal number for affecting brand liking?

**Preference consistency**

Chartrand and colleagues demonstrated how primed unconscious goals can have motivational properties and can serve as cues that activate purchasing goals. They showed that effects are greater with a longer time interval between the priming task and the choice (2008). In the same vein, as this experiment only allows a snapshot understanding of the effects it would be interesting to do a follow-up study to understand if this experiment’s framing had lead to any change in preference over time. Additionally, such study would enable us to further understand cognitive vs. emotional motivations, goal pursuits and better insights to daily life behavior.

**Sample population**

Since the aim of this thesis was to understand brand associations’ effect on liking as exemplified by the Vestas brand a sample population reflecting one of the company’s actual target groups was deployed. Therefore a future study with a broader sample population e.g. subjects with no prior awareness of the brand and different cultural and educational backgrounds. This may reveal interesting findings or correlations that were not detected in this sample.

**Involvement**

Another relevant variable is the level of consumer involvement. Consumer involvement is identified as the psychological outcome of motivation (Arnould, Price, & Zinkhan, 2005). While the phenomenon of involvement is strongly connected to the cognitive decision making model it would be relevant to ask consumers to rate their (conscious) motivation for e.g. taking a new job. This may provide some further explanations for the current findings.

Finally, considering a variable of brand involvement in the experiment may yield different results. For instance, one could study the effects of brand associations on liking for a high
involvement brand e.g. a job at Vestas compared to a low involvement brand e.g. a Snickers chocolate bar.

23. **Conclusion**

This thesis was offset by the premise that brand associations and brand liking are crucial to brand equity. Influential brand management scholars view associations and preference as cognitive constructs in the consumer memory. Inherent in this view is that consumers make deliberate, effortful and conscious choices. However this understanding is heavily challenged by cognitive neuroscientists who have suggested that consciousness account for as little as 5% in our brain activity. Some scholars suggest that most of our decisions and purchasing behavior is lead by unconsciously motivated goals. On the foundation of the discrepancy between traditional brand management and cognitive neuroscience, this study set out to investigate how brand associations affect both conscious and unconscious brand liking.

Based on different relevant theories and research it was hypothesized that there is a positive relationship between the number of self-reported brand associations and liking. Further, it was also hypothesized that there is a positive relationship between a high number of induced brand associations and liking. The hypothesis was tested with specific focus on Vestas and on a sample population that reflected an authentic Vestas target group. While there were some limitations to the methods of this exploratory research, results showed that brand associations do affect brand liking. Also, that brand liking differ greatly depending on which level of conscious awareness is measured. The main finding was that a high number of manipulated brand associations had a strong effect on unconscious brand liking.

In relation to the theory review it becomes clear that marketers must rethink their current understanding of consumers’ mindsets and include the importance of non declarative memory types too. However, neither the associative network model nor the declarative/non-declarative memory model are ideal for explaining how brand associations work in relation to memory. Henke’s novel distinction of memory types by processing modes rather than consciousness may be a better way of understanding how associations work in relation to liking. Overall this indicates that more research is warranted.
In general, the findings can be useful for strategic brand managers and marketing researchers to recognize conscious reason and unconscious emotion as a partnership. Perhaps the gap between research and execution can be demised by an increased attention to unconscious memory processes, affective and intuitive decision making.
24. References


25. Appendices

Appendix 1 - Brand building blocks in the *Customer-Based Brand Equity Pyramid*

![Customer-Based Brand Equity Pyramid](image_url)

Figure 24 Customer-Based Brand Equity Pyramid adapted from Keller, K. L. (2008)
Appendix 2 - Vestas Wind Systems

Company background

Vestas Wind Systems A/S (Vestas) is a Danish limited liability company founded in Ringkøbing, Denmark in 1945. Its core business covers the development, manufacture, sale and maintenance of wind turbines. Vestas is the market leader in wind energy and specializes in planning, installation, operation and maintenance. The company has installed more than 43,000 wind turbines in 65 countries on five continents. Today Vestas employs more than 20,000 people worldwide. (Vestas, 2011)

Increasing demand for talent

Post the global economic crisis in 2008, Vestas continues to have a tremendous global recruitment need. With a growing demand for clean and sustainable energy sources, the company expects to create approximately 2,500 new jobs a year, depending on the economic climate. This puts significant demands on the company’s ability to attract staff. In a number of countries, the size of the Vestas workforce will increase significantly. This means an increasing demand for talent in a market under pressure, from a shrinking talent pool, ageing population in many countries, declining facility rates, globalization, and social changes around the expectation from candidates for an employment experience which is more aligned with their personal values (Andersen, 2010).

Global competition for talent

Vestas faces a number of challenges related to a global demand for talent. In many of the countries where Vestas works, the demand for qualified staff is significant and competition for attracting talent is strong. Vestas offers global career opportunities to attract talent. However companies such as BMW, IBM, GE, Grundfos and Infosys can also offer this proposition and most of Vestas’ recruitment competitors operate in industries and markets where the majority of potential candidates in the target groups have a much greater awareness of these industries, than they do of the wind power industry.

In Denmark, awareness of industry is relatively high and Vestas is known to many people in the recruitment target group as an attractive place to work with good career opportunities
(Universum, 2011). However there are still specific target groups who are not aware of how their skills fit in at Vestas. This group includes electricians, controllers, business development people, electrical-, power plant-, sales-, software-, building-, and process engineers etc. (Andersen, 2010).

**Management of the Vestas employer brand**

The Global Employer Branding department is placed under the Talent Management department, in the company’s HR department. The department is a strategic brand management function, that supports 22 global colleagues in carrying out operational employer branding tasks in key recruitment markets worldwide (Shin Andersen, 2011). According to department director Birgitte Brix Andersen “Global Employer Branding is responsible for building the Vestas Employer Brand towards the most important and difficult to recruit recruitment target groups based on the 1-year recruitment forecast 5-year recruitment scenario” (2011) with the overall aim of building employer brand awareness and attracting the best talent to the company.
Appendix 3 – EVP research process from 2007-2010 (Confidential)

• First two steps show studies of global target groups, to find out what they want from an employer. The first one in 2007, was done to understand general wants for all target groups. The second in 2010, was conducted to find more specific information on the recruitment wants of difficult target groups – e.g. senior professionals with engineering.

• Third step consists of a culture study and employee survey to ensure that EVP’s reflect actual Vestas propositions. An alignment to the corporate brand to ensure similar synergies and adapted to local conditions via interviews with employer branders. Further the competitive landscape is research to ensure a unique position for the Vestas message.

• Fourth step is an internal workshop with key stakeholders to ensure support for a realignment.

• Fifth step is the EVP-realignment in which value propositions are updated to the target groups’ current requirements.

• Sixth step is a global qualitative test, in which selected employees, who represent recruitment target groups, are asked to evaluate the re-aligned EVP.

• Finally, new messaging, taglines and imagery is produced to support and communicate the EVP. (Andersen, 2010)
Appendix 4 – Brand associations in the value generating process

Figure 25 Brand Equity model adapted from Aaker, D. A. (1991)
Appendix 5 – Subjects’ free associations of Vestas

Brandkendskab og associationer

Hvad associerer du Vestas med? Besvar venligst med stikord - gerne flere.

Response Count

40

answered question 40

skipped question 0

1. Vindmøller, dansk, aetik, rutebane, tivoli, energigiven, miljø, sne, snechikane, uheld, ansvar, CO2-neutral, vedvarende, energi, eksport.
2. Vindmøller, omskæftigelse mht regnskaber, grå teknologi, presset af østen
3. Vindmøller, vind, energi, bæredygtigt, uddannelse, USA, udSigt.
4. Vindmøller, jyllands, Kina, udvikling, miljø, grønenergi, dalende arbejdspladser i dk
5. Verdens største vindmøllefirma, aktier, kæmpe vindmøller, testområde i Jylland, bygningsingeniører og stærkningeniører, maskinineniører
6. Vindmøller, forskning, international, gamle kammerater.
7. Meget medie omtalte Negative nyheder Stor konkurrence
8. Højteknologisk dansk international virksomhed med en stor markedsdel inden for vindmøller
9. vindmøller, ren energi, vindenergi, global virksomhed
10. Grøn virksomhed, har tabt færerposition
11. Vindmøller, grøn energi, tre vinger, glasfiber, dybdvandsfundamentener
12. vind grøn energi danmark vindmøller foregangs virksomhed global førende
13. vindmølleindustri, globalt marked, afmattning i Danmark, kursfald pt
14. Vindmøller, Siemens, dansk virksomhed, god samvittighed, miljø, verdens
16. Vindmøller, interantioalt, en af de førende inden for området, konkurrence
17. Vindmøller, energi
18. Vindmøller, mulig arbejdsplass, vindmøller på land, Ditlev Engel, dårligt ry for Horns Rev 1 projektet
19. Vindmøller, bæredygtighed, grøn energi, udvikling af arbejdsplasser, konkurrence fra østeuropa og asien
20. Vindmøller, energiteknologi, miljøvenligt, udvikling, kreativitet, faldende aktier
22. Vindmøller, Ditlev Engel, vægtte, Vestjylland, ledende, hård konkurrence
23. Vindmøller, hav, jyllands, aktier, ditlev engell, nordex, siemens


Jun 23, 2011 6:39 AM
Jun 23, 2011 6:02 AM
Jun 22, 2011 11:50 PM
Jun 22, 2011 10:20 AM
Jun 22, 2011 10:19 AM
Jun 22, 2011 9:08 AM
Jun 21, 2011 9:24 AM
Jun 21, 2011 8:57 AM
Jun 21, 2011 6:28 AM
Jun 21, 2011 2:08 AM
Jun 20, 2011 5:52 PM
Jun 20, 2011 10:09 AM
Jun 19, 2011 2:46 AM
Jun 18, 2011 5:37 AM
Jun 17, 2011 4:49 AM
Jun 17, 2011 1:03 AM
Jun 17, 2011 12:39 AM
Jun 16, 2011 10:44 AM
Jun 16, 2011 6:14 AM
Jun 15, 2011 1:01 PM
Jun 16, 2011 1:03 AM
Jun 15, 2011 12:55 AM
Jun 14, 2011 8:26 AM
### Pre-test questionnaire results

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<td>25</td>
<td>Vindmøller, var &quot;ny industri&quot;, nu bare industri</td>
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<td>Vindmøller, stor dansk virksomhed, klimakrise, bæredygtighed, alternativ energi</td>
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<td>vindmøller, ditlev engel</td>
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<td>buisness excellence, graduate programme, vindmøller, elitert, cutting edge, sponsorater, duksedreng</td>
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<td>30</td>
<td>Vindmøller, stor virksomhed, skarpe ingenierer inden for vind og dynamik, er stærke i normer og standarder</td>
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<td>Vindmøller med gear(land&amp;hav), grøn energi, globalt salg</td>
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<td>wind energy, Jylland, Tåstrup, stor firma, internationale, stor cut off sidste år</td>
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<td>Vindmøller, vedvarende energi, stor arbejdspels, international farerposition, gode fremtidsperspektiver, hård konkurrence, svingende aktiekurs.</td>
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<td>vindmøller internationale milje</td>
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<td>vindmøller glastibier, asynkrongenerator, energipolitik, hårdt marked at være i. Ditlev Engel fodej i PR, mårskie. C20, elevatorkurser</td>
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Appendix 6 – Indirect and projective research methods

The free association task

The free association task is an indirect measurement approach. In the task the consumer is asked what comes to mind when he thinks of a certain brand. An example is this thesis’ online survey question: “What do you associate with Vestas?” This method is simple and effective in revealing brand associations that will provide the marketer with information from which he can produce a mental map that is helpful in identifying possible range of brand associations in consumers’ memory (Keller, 2008). To Aaker, this type of techniques is useful because it bypasses the inhibit thinking process of the respondent. He suggests that an oral response is better than a written one since the aim is to get insights in the spontaneous thoughts and feelings about the brand avoiding evaluation. Given that this method often results in hundreds of words, Aaker suggests quantitatively evaluating the relative importance of each brand association. This can be done by asking the target group how well the different brand associations fit to the brand on a five-point scale running from “Fits extremely well” to “Fits not well at all” (Aaker, 1991, p. 138).

Comparison task

Comparison task is a projective method which is useful to elicit consumer thoughts and feelings. In this task consumers are asked to convey their expressions by comparing brands to magazines, people, animals, countries, activities, fabrics ect. For example consumers may be asked: “If Vestas was a magazine, which one would it be?” or “which one of the people in this picture would be most likely to work at Vestas?” In each case follow-up questions about why respondents made the specific comparisons. The answers can provide glimpses into the psyche of the consumer and is especially helpful in understanding imagery associations (Keller, 2008, p. 363).
Appendix 7 - Filler-tests

Word Mobilization

This task is used to determine the subjects’ ability to retrieve a known word from memory. Both a phonetic test (words starting with ‘S’) and a semantic (animal names) mobilization test were conducted. This is a test often used to diagnose dyslectics, however in this research it was used a experiment filler-test.

WAIS information

A paper based trivia of 15 WAIS information questions was given to subjects to assess general information levels. WAIS tests are primary clinical instruments used to measure adult and adolescent intelligence (IQ).

The 15 questions are displayed below.

1  Hvor mange farver er der i det danske flag?
2  Hvad er formen på en bold?
3  Hvor mange måneder er der på et år?
4  Hvad er et termometer?
5  Hvad er hovedstaden i Italien?
6  Kan du nævne fire danske statsministre?
7  Hvad er hjertets opgave?
8  Hvad vil du mene er gennemsnitshøjden for kvinder i Danmark?
9  I hvilken verdensdel ligger Sahara?
10 Hvornår er den danske grundlovsdag?
11 Hvem var Knud Rasmussen
12 Hvor mange uger er der i et år?
13 Hvilken retning skal man rejse hvis man skal fra København til Esbjerg (nord, syd, øst, vest)?
14 Hvem skrev Hamlet?
15 Ved hvor mange grader koger vand?
16 Hvad er en obo?
17 Hvem var Ludvig Holberg?
18 Hvor mange indbyggere vil du mene der bor i hele Skandinavien til sammen?
19 Hvad er Koranen?
20 Hvem er konge eller dronning af Danmark i dag?
21 Hvad er et grundlovsforhør?
Hvorfor er der dag og nat?
Hvad er det i gær der får en dej til at hæve?
Hvem fremsatte relativitetsteorien?
Hvor mange kilometer vil du mene det er fra Skagen til grænsen til Tyskland?
Hvad handler første Mosebog om?
Hvad er etnologi?
Hvor mange medlemmer er der i Folketinget?
Hvem var H.C. Ørsted?

Cognitive Reflection Test

This test consists of three riddles. These are constructed in a manner where the respondent will have an immediate wrong answer coming to mind. The test measures a person’s cognitive ability. Results from the test can be related to decision making characteristics, time preference and risk preference (Frederick, 2005).
Appendix 8 – Respondents’ work experience

- 0 år
- 1-3 år
- 4-6 år
- 7-9 år
- Jeg har været erhvervsaktiv mere end 9 år

(Pre-test questionnaire results)
Appendix 9 – Respondents’ engineering backgrounds

- 48% - Miljøingeniør
- 13% - Produktionsingeniør
- 12% - Kemiingeniør
- 10% - Strømstrømsingeniør
- 5% - Svagstrømsingeniør
- 3% - Maskiningeniør
- 2% - Bygningsingeniør
- 2% - Elektronikningeniør
- 2% - Nanoingeniør
- 2% - Mekatronik-ingeniør
- 2% - Softwareingeniør
- 0% - Eksportingeniør
- 0% - Anden faggruppe (Hvis din ingeniofelgruppe ikke er specificeret ovenfor, angiv venligst dit fag i det blanke svarfelt)

(Pre-test questionnaire results)