

Aus dem Institut für Agrarökonomie
der Christian-Albrechts-Universität zu Kiel

Boosting Trait Inferences: Psychological and Neural Mechanisms in the Effect of Faces on Brand Perceptions

Dissertation
zur Erlangung des Doktorgrades
der Agrar- und Ernährungswissenschaftlichen Fakultät
der Christian-Albrechts-Universität zu Kiel

vorgelegt von
Diplom-Kauffrau Yonca Limon

Kiel, August 2010

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Tag der mündlichen Prüfung:	04. November 2010

Gedruckt mit der Genehmigung
der Agrar- und Ernährungswissenschaftlichen Fakultät
der Christian-Albrechts-Universität zu Kiel

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aus dem Internet geladen werden.

Danke

An dieser Stelle möchte ich mich bei allen bedanken, die mich während der letzten drei Jahre tatkräftig unterstützt haben und somit zum Gelingen dieser Doktorarbeit beigetragen haben.

In erster Linie gilt mein Dank meinem Doktorvater Prof. Dr. Ulrich Orth, der mir mit seinen wertvollen Ratschlägen und seiner fachlichen Unterstützung viele Anregungen für meine Arbeit gab und den erfolgreichen Abschluss dieser Dissertation ermöglichte. Besonders bedanke ich mich für sein mir stets entgegengebrachtes Vertrauen.

Herzlich bedanken möchte ich mich auch bei Prof. Dr. Martin Reimann. Für seine Anleitung und Betreuung während meines halbjährigen Forschungsaufenthaltes an der University of Southern California (L.A., USA) bin ich sehr dankbar. In diesem Zusammenhang geht ebenfalls ein großer Dank an die Wüstenberg-Stiftung, die mir diesen Aufenthalt teilfinanzierte. Daneben bedanke ich mich bei den Experten für ihre aktive Unterstützung und den Probanden für ihre Teilnahme an meinen Studien. Darüber hinaus danke ich JProf. Birgit Schulze für die Erstellung des Zweitgutachtens. Auch Prof. Udo Konradt gilt mein Dank für die Bereitstellung des Drittgutachtens.

Ein großer Dank geht aber auch an meine Kollegen der Abteilung A&F Marketing, insbesondere Dr. Steffi Gal für die unvergessliche Zeit. Auch bei Kathrin Scheubeck und Marion Wolfram möchte ich mich für ihre liebevolle und unterstützende Art bedanken.

Des Weiteren möchte ich mich bei meinen Freundinnen Steffi Dierks, Dr. Christiane El-Jarbi und Anna Pahle für das Korrekturlesen bedanken. Sie haben mich im letzten Jahr meiner Arbeit nicht nur tatkräftig unterstützt, sondern bauten mich auch stets auf und sorgten für die gewisse Abwechslung. Für unvergesslich schöne Wochenenden bedanke ich mich bei Selvi, Sveni, Najwan, Coco, Julchen, Jan, Britta, Nina, Alex, Oguzhan und Viola.

Mein innigster Dank gebührt meiner Familie, insbesondere meinen Eltern, ohne die ein Studium und eine Doktorarbeit niemals möglich geworden wären. Vielen Dank für eure grenzenlose und uneingeschränkte Unterstützung. Tesekkür ederim size.

Schließlich möchte ich mich bei meinem Freund und Verlobten, Dr. Baris Calisan, bedanken. Er hat mich in meinem letzten Jahr mit vollster Kraft liebevoll unterstützt und war zu jeder Tages- und Nachtzeit für mich da.

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LIST OF ABBREVIATIONS AND ACRONYMS

Aad	Attitude toward advertisement
Abr	Attitude toward brand
Ad	Advertisement
ANOVA	Analysis of variance
BOLD	Blood Oxygenation Level Dependent
cf.	confer (lat.): compare
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CR	Composite reliability
CS	Conditioned stimulus
EFA	Exploratory factor analysis
e.g.	exempli gratia (lat.): for example
ELM	Elaboration Likelihood Model
EMG	Electromyography
et al.	et alii; et aliae; et alia (lat.): and others
etc.	et cetera (lat.): and so on
Ff	Following pages
fMRI	Functional magnetic resonance imaging
FOV	Field of view
GFI	Goodness-of-fit index
GLM	General linear model
i.e.	id est (lat.): that is
IFC	Item factor correlation
MPFC	Medial prefrontal cortex
MPRAGE	Magnetization-prepared rapid acquisition with gradient echo
N.A.	Not applicable
Nacc	Nucleus accumbens
NFI	Normed fit index
OFC	Orbitofrontal cortex
p.	Page
r	Reverse coded item
SA	Social Adaptation
SD	Standard Deviation
Seq.	Sequentially presented
Sim.	Simultaneously presented
TE	Time echo
TR	Time repetition
US	Unconditioned stimulus
vs.	Versus

LIST OF SYMBOLS

α	Cronbach's Alpha, reliability
d.f.	Degrees of Freedom
F	Fisher-Snedecor distribution
$H_{1...x}$	Hypotheses
M	Mean value
N	Number of participants/faces
P	Significance level
SD	Standard Deviation
t	t-distribution
χ^2	Chi Squared

1. Introduction

1.1 Motivation and Scope

Firms frequently select spokespeople—also called endorsers—on the basis of specific physical characteristics, such as the face, to better differentiate and position their brands (Erdogan and Drollinger 2008). For example, Audi is currently publicly seeking the “A1 face” that is going to promote the new Audi A1 with its distinctive, rugged and powerful exterior design (<http://www.breitschwert.de/audi-a1-gesicht/>¹). The body care company Beiersdorf recently screened thousands of models in the United States, Canada, France, and Germany to find the single most appropriate face for positioning its Nivea brand as sincere and sophisticated. Apple purposely contrasted the extrovert–progressive personalities of their Mac spokespeople against more conservative–sturdy Microsoft characters. These three cases suggest that human faces assist firms in shaping personality impressions of brands, which subsequently may affect consumer brand impressions, brand liking and choice. Several streams of research provide preliminary evidence in support of this practice; yet, they also show gaps in existing knowledge that call for closing.

First, research on visual stimuli indicates that consumers generally form impressions from holistic types; that is, single elements forming a whole object (e.g., Kimchi 1994; Veryzer 1999; Orth and Malkewitz 2008). More specifically, consumers construct impressions not only from the overall appearance of the product and package designs, but also from human faces, which they rely on in making judgments about one’s personality (e.g., Sergent 1984; Grammer and Thornhill 1994; Macrae et al. 2005; Little and Perrett 2007; Walker Naylor 2007). However, current scientific research limits insights to selected face types, such as the “classic beauty,” the “girl-next-door,” or the “babyface,” which are based on overall physical attractiveness (Solomon, Ashmore, and Longo 1992) or on selected facial features (e.g., Massip, Garrido, & Herrero 2004). Additionally, prior research establishes only few links to trait impressions, such as honesty or kindness (Berry and McArthur 1985; Gorn, Jiang, and Johar 2008). In other words, earlier work has neither developed a comprehensive taxonomy of holistic face types nor systematically related those types to a range of generic personality trait impressions. Yet, a taxonomy of holistic face types is important, as impressions generally do not stem from any single facial feature but rather from the entire Gestalt of many features working together holistically (Hole 1994; Tanaka and Sengco 1997). Furthermore, previous

¹ Accessed August 9th, 2010.

studies have mainly probed on how consumers form impressions for new brands (e.g., Bower and Landreth 2001; Erdogan and Drollinger 2008) or assessed the role of celebrity endorsers (e.g., Batra and Homer 2004; Lee and Thorson 2008). Yet, since familiarity with a brand significantly influences the transfer of meaning (McCracken 1989) and prior emotional attachment to a brand indicates a closer brand-self fit with stronger resistance to adjusting impressions (Fournier 1998; Thomson, MacInnis, and Park 2005), the findings obtained from previous studies may neither transfer to non-celebrity faces nor established brands.

Second, previous studies have examined the effects of simultaneous exposure of consumers to both face and brand stimuli (e.g., Bower and Landreth 2001; Choi, Lee, and Kim 2005; Ryu, Park, and Feick 2006). However, advertising practice and research show that sequential exposure also occurs frequently, as consumers first view the endorser and then view the brand (Shapiro 1999). In addition, research on the contextual effects of face processing suggests that prior exposure to a prime (the face) influences the perception of a target (the brand) (Cabeza and Kato 2000). Further, prior work on perceptual priming with faces proposes that when people infer personalities from faces, either an assimilation effect or a contrast effect can occur (Ruys et al. 2006).

Third, research in social neuroscience corroborates that emotion can underlie face perception and be tied to specific brain regions (e.g., Aharon et al. 2001). For example, researchers found that unfamiliar faces (with neutral facial expressions) evoke strong responses in the amygdala, a brain region that is involved in the processing of emotional stimuli (Kesler-West et al. 2001; Gobbini et al. 2004) and that automatically tracks the trustworthiness of novel faces (Engell, Haxby, and Todorov 2007). Other studies employed specific facial expressions (e.g., sad and happy) and identified different responses in those brain regions responsible for affective processing such as the amygdala and the orbitofrontal cortex (Morris et al. 1996; Blair et al. 1999). However, previous pioneering research on the neural responses to brand and human personalities has mainly focused on distinguish-ing judgment-related processes in the brain without further investigating the mode of exposure of face and brand or analyzing underlying emotional processes (Yoon et al. 2006). The present research utilizes neuroimaging methodology to investigate how emotion arises from the perception of endorser faces and how it impacts brand choice. This approach seems warranted since (1) extant neuroscientific research demonstrates that emotion guides the decision-making process in terms of making advantageous or disadvantageous choices (Bechara, Damasio, and Damasio 2000; Bechara 2004; Shiv 2007) and because (2) neuro-imaging allows for a more direct view on underlying

emotional processes than, for example, self-reports, which may be prone to cognitive biases (Poels and Dewitte 2006).

The present research aims at closing these gaps in prior research and, in doing so, makes three contributions. Specifically, the thesis argues and provides empirical evidence that consumers infer brand personality impressions depending on (1.) the holistic type of an endorser's face, (2.) the match between face- and brand-based personality, and (3.) the mode of exposure (i.e., simultaneous or sequential). Moreover, this research shows that alternative explanations for these effects (i.e., face attractiveness, emotional attachment to the brand, and perceived self-similarity), which have received much attention in related research, are equivocal and do not follow a general rule. The dissertation integrates Gestalt psychology and face research with match-up and perceptual priming theories to design and conduct five studies examining how faces of non-celebrities impact consumer trait inferences for existing brands. The research tackles this question from several perspectives using psychometric as well as neurological approaches to show that trait inferences largely depend on holistic face types of faces and mode of exposure (simultaneous vs. sequential presentation of face and brand). Five studies are conducted, which aim to provide marketers with new insights assisting them in successfully selecting endorser faces for their brands.

Study I identifies holistic types of faces rooted in unique combinations of facial features. Study II provides evidence that consumers develop brand personality impressions from trait inferences of endorsers' holistic face types. Study III and VI show that the match or mismatch between face-based and brand-based personality trait inferences as well as the mode of exposure (simultaneous vs. sequential presentation of face and brand) differentially affect brand impressions and purchase intentions. More precisely, the assimilation and contrast boost effect are identified. This research additionally tests potentially alternative explanations for these effects (i.e., face attractiveness, emotional attachment to the brand, and perceived self-similarity), which have received attention in related previous researches. Study V shows that matching endorser faces and brands on salient personality traits presented simultaneously has a unique emotional basis that leads to increased brand choice.

Overall, this research suggests that matching faces and brands that are presented simultaneously boost brand personality inferences, elicit emotion, and lead to brand choice, whereas, mismatching faces and brands presented sequentially, although boosting brand personality inferences, do not generate emotion that drive choice.

1.2 Organization of the Thesis

The thesis is organized as follows. After introduction, chapter 2 gives insights to the nature of face perception with an emphasis on the holistic processing underlying face perception. In the following, a review on face-based personality trait inferences is presented. Chapter 3 focuses on the employment of endorser faces in order to create desired brand impressions. Furthermore, it reviews the highly relevant brand personality concept and details how endorser characteristics can influence brand personality impressions. Both chapters conclude with a summary and highlight the importance for the empirical studies. Chapter 4 presents the five empirical studies and identified boost effects including their underlying psychological and neural mechanisms in how faces impact brand personality trait impressions. All studies address to respective study objectives, summarize theoretical backgrounds and give details on applied methods. Interpretations of study results and discussions follow. This chapter concludes with a general discussion of the results including advancements of theory and implications for the management. Limitations that applied to the current studies and corresponding opportunities for related future research are presented in the end. Chapter 5 illustrates a summary of the empirical studies and their results that are presented in German in chapter 6. The questionnaires (Study I, II, III, IV) and forms required for the fMRI experiment in Study V are located in the appendix of this thesis.

2. The Nature of Face Perception

Human faces are the most frequently exposed part of the whole body and therefore visible to others (Fink, Grammer, and Thornhill 2001). Research on faces indicates that “face” is a broad term ranging from facial expressions to facial features or attributes. While not minimizing the importance of other characteristics, this research focuses on facial features that drive visual perception. Faces are as complex and individual as the personalities behind them and researchers acknowledge the special holistic character of face perception (Farah et al. 1998). Psychology and consumer research has documented a large number of responses generated by human faces and facial features. People make a variety of judgments from faces and it has been shown that these judgments are formed very accurate and quick (Todorov, Baron, and Oosterhof 2008).

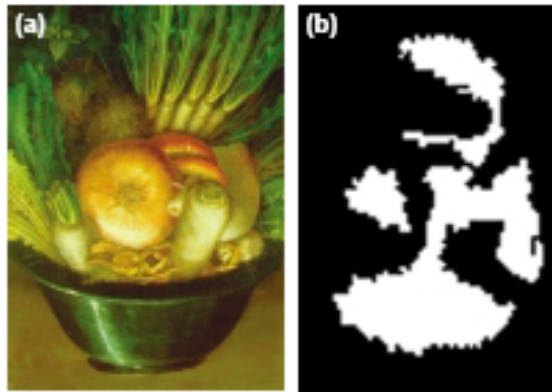
The objective of chapter 2 is to give an introduction into the nature of face perception by presenting the underlying mechanism of face processing and personality inferences from faces. In section 2.1, special focus is put on the holistic nature of face perception. Personality trait inferences evoked from faces is another area of interest and summarized in the next section 2.2. More specifically, facial features of babyish and attractive faces are presented in detail followed by a discussion on the influence of attractiveness and babyishness on judgments of personality traits. Chapter 2 concludes with a summary of results and highlights the relevance for the empirical studies.

2.1 The Holistic Processing underlying Face Perception

Accurate face perception is critical for any type of relationship since recognition of faces provides effective cues for specific information on the person behind that face (Heisz and Shore 2008). It is generally acknowledged that human faces are recognized on the basis of individual facial features (mouth, eye, nose, etc.) as well as on the relations among the features, the so-called face configuration (e.g., Cabeza and Kato 2000; Maurer, Grand, and Mondloch 2002; Goffaux and Rossion 2006). Configural processing of faces has received considerable attention in the literature and researchers agree that it can be divided into three types (e.g., Maurer, Grand, and Mondloch 2002; Goffaux and Rossion 2006). The first form refers to the fact that individuals, seeing a stimulus, recognize it is the face because its features are arranged in a familiar manner, for example with a nose above the mouth. Adults have the ability to detect faces quite easily even when other features such as vegetables are

2. The Nature of Face Perception

used instead of facial features or they are inverted² or constructed from patches of intense light and shadow, at least in the upright position (see figure 1).



Source: Maurer, Grand, and Mondloch 2002, p. 256

Figure 1: Face Recognition under different Conditions: (a) an inverted painting (the vegetable gardener), (b) an inverted two-tone mooney face with intense light and shadow

As all faces have the same basic configuration, recognizing faces is facilitated. The second form refers to the perceived distances among facial features. When positions of features are kept similar, variations in spatial distances among features or in featural distortions (e.g., darkened eyebrows) can be detected by adults. However, inverting features reduces the accuracy of face recognition (Maurer, Grand, and Mondloch 2002).

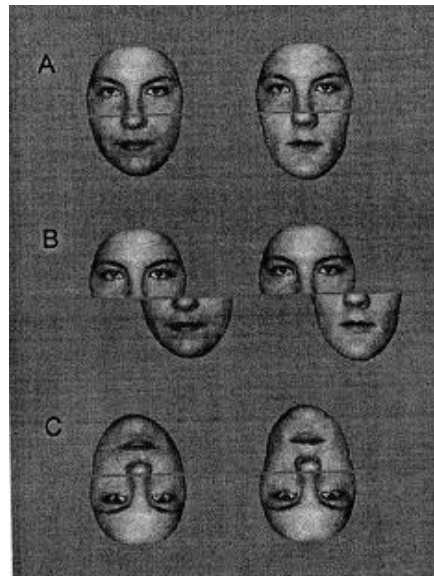
The third form refers to a holistic processing – integrating the features into a gestalt. The expression “holistic” reflects both, processing and representing the face stimulus (Goffaux and Rossion 2006). Specifically, Rossion and Boremanse (2008, p. 10) argue that “faces are processed holistically because of their holistic representation in the visual system”. A considerable number of researchers investigated holistic processing of faces (Maurer, Grand, and Mondloch 2002, for a review; Goffaux and Rossion 2006) out of which two experiments are widely being used in order to find evidence for the holistic view: the composite face paradigm and the whole-part paradigm.

The composite face paradigm describes that subjects tend to perceive identical top halves of two faces as being different or slower and less accurate when they are presented in a composite with the bottom halves of other faces (see figure 2A). This composite illusion disappears when composite faces are offset laterally or when faces are presented upside down

² Inversion: “presenting the face upside down with respect to the viewer” (Hole, George, and Dunsmore 1999, p. 341).

2. The Nature of Face Perception

(Young et al. 1987; Hole 1994) (see figure 2B and 2C). The findings indicate adults tend to process the stimulus as a whole, making it harder to process individual features.



Source: Michell, Corneille, and Rossion 2007, p. 912

Figure 2: The Face-Composite-Effect

Therefore, the well-known “face-composite-effect” refers to the advantage of the misaligned over the aligned face halves and is generally considered the most convincing evidence that facial features, here the top and bottom parts of a face stimulus, are integrated into a gestalt, a holistic representation. Specifically, according to Mauer, Grand, and Mondloch (2002, p. 256) the “face-composite-effect” clearly shows that “when upright faces are processed, the internal features are so strongly integrated that it becomes difficult to parse the face into isolated features, at least at short exposures that prevent feature-by-feature comparisons.”

In the part-whole paradigm, Tanaka and Farah (1993) proposed that the isolated parts of a face (nose, eyes, or mouth) would be more difficult to recognize than the whole face, relative to the part and wholes of other kinds of stimuli. They cite their experiments as evidence that participants recognized facial features (nose, eyes, or mouth) better and more accurate when these were presented in the context of the whole face (i.e., which is Larry? – Larry presented with his nose versus Bob’s nose) rather than presented in isolation (i.e., which is Larry’s nose?). Inverting the face also resulted in a loss of such a benefit like in the case of the composite face effect. Further, findings from other types of stimuli – scrambled faces and houses also did not show the same effect.

In sum, both paradigms indicate that face recognition is affected by the other face parts (Goffaux and Rossion 2006). In the composite face experiment, the recognition of the face

half was interrupted because the other half differed across target and text composite faces. In the part-whole experiment, the recognition of one face feature was facilitated when it was integrated in the same context of a whole face. Both effects underscore the strength of the holistic nature of face processing.

2.2 Faces and Personality Trait Inferences

2.2.1 Physiognomy – the Art of Reading from Faces

Physiognomy refers to the art of reading personality traits from faces and dates back to ancient Greece “when Aristotle is believed to have written a lengthy treatise on physiognomy” (Hassin and Trope 2000, p. 837). In order to decide whether someone is trustworthy, rugged or extrovert, individuals often tend to judge him or her by evaluating certain cues, such as their behavior, sex, age or clothing style. In addition to these cues there are the features or characteristics of the face that enable individuals to gain information about the personality behind that face. The face plays an important role in social interactions and influences a variety of trait inferences because it is steadily and situationally perceived whenever an interaction takes place. Further, faces are frequently displayed in media to promote products (Little and Perrett 2007). Therefore, faces are considered sources of information and play an important role in social perception (Hassin and Trope 2000) because people unintentionally and spontaneously make inferences from them (Todorov and Uleman 2004).³ An early famous work “Essays on Physiognomy” (Lavater 1880) describes in detail how facial features are related to people’s characteristics (e.g., “the nearer the eyebrows are to the eyes, the more earnest, deep, and firm the character”, p. 59). Furthermore, the perception of some characteristics is even shown to be spontaneously processed or decoded from faces such as age, gender, and to some extent attractiveness (Santos and Young 2005). More importantly, other researchers argue that first impressions are formed very fast and intuitive (Willis and Todorov 2006; Bar, Neta, and Linz 2006). For example, Willis and Todorov (2006) found that an exposure of 100ms is sufficient for people to make judgments about specific trait inferences (e.g., trustworthiness, competence) from an unfamiliar neutral face. Moreover, another research showed that consistent judgments whether someone is threatening were actually made in only 39ms for unfamiliar neutral faces (Bar, Neta, and Linz 2006).

³ The idea to judge people based on their physical appearance seems somehow undesirable but this does not exclude the interest in this research area in order to understand it.

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Further, it is well documented that people form reliable and robust personality trait inferences on other's facial appearance (see Berry and Wero 1993 for a review). Additional to the perception of face-based personality trait inferences, another extensively researched area is the processing of emotional facial expressions such as the EMG measures of facial muscle activity by Ekman and his colleagues (e.g., Ekman 1982) or other psychophysiological experiments. Recently, a lot of attention is paid to face perception from a neuroscientific perspective highlighting the brain regions that are specialized in face processing (see section 4.4.2).

Furthermore, Hassin and Trope (2000) distinguished between two processes, namely "reading from faces" and "reading into faces". The first term "reading from faces" is used when the face is used as a source of information from which people infer personality traits in order to make judgments or decisions. Results have shown that the physiognomic information changed the interpretation of verbal information and especially in case of ambiguous information individuals based their judgments more on faces. The second term "reading into faces" is used when information about the person changes the perception of faces in terms of facial features. In a recent work, Paunonen (2006) found personality information influenced perceived attractiveness. Specifically, subjects were given verbal information on a stranger's characteristics followed by rating on several impressions about him or her. Then they were given a picture and had to rate these subjects. Results showed subjects highly rated honest were perceived as having a face that looked more attractive. Thus, this study suggests personality information about an unfamiliar person can affect individuals' evaluation of the attractiveness.

Given the evidence that face-based personality traits are read into verbal information and verbal information is read into facial feature, Hassin and Trope (2000) suggest an automatic process underlying face perception and also highlight the role of physiognomy and strong verbal information. In literature the issue of reliability of physiognomic inferences is undoubted and authors agree on this but validity of physiognomic judgments is still uncertain and controversial. Considerable experimental evidence suggests people can read or infer personality trait information from faces (e.g., Berry 1991; Zebrowitz and Collins 1997). This process is also considered highly reliable, thus, different people may infer similar traits from the shown faces. However, results on the validity of physiognomic inferred personality trait attributions are somehow mixed. Some earlier studies concluded that there is no significant correlation between the trait personalities inferred from facial features and the actual ones individuals possessed (e.g., Cohen 1973; Alley 1988). Alley (1988, p. 172) argued that "scientific research, however, has generally found little or no validity in physiognomy". But

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more recent studies have found that first impressions based on facial appearance significantly predicted individual's self-ratings of agreeableness, extraversion, and conscientiousness (e.g., Albright et al. 1988; Borkenau and Liebler 1992). Thus, confirming the accuracy of face-based personality impressions⁴.

According to Berry and Wero (1993, p. 498), numerous researchers have found impressive agreement “between the attributions that different perceivers make regarding a given face (e.g., Langlois 1986; Alley 1988; Bull and Rumsey 1988; Cunningham, Barbee, and Pike 1990)”. Several authors have taken the position that agreement in such personality inferences reflects shared cultural beliefs being communicated about links between personality and facial appearance (Berry and Wero 1993) – mostly presented through marketing communication tools and their repeatedly portrayed endorsers. Berry and Wero (1993) discussed other well-acknowledged approaches which explain relations between facial characteristics and personality traits including biological or genetic factors⁵ or facial ex-pression⁶.

Still, many researchers are trying to solve the disagreement between these studies by conducting advanced experiments to gain more insights into physiognomy. More recent findings show that trait inferences from faces are valid. According to Hassin and Trope (2000), most of this evidence was found by Berry, Zebrowitz, and their colleagues (e.g., Berry 1991; Zebrowitz and Collins 1997). Recently, new methodologies are used in order to find evidence. For example, Little and Perrett (2007) provided evidence that accuracy in inferring personality traits from faces using facial appearance is possible. They developed composite facial images of faces scoring high and low on a particular trait. Composite facial images were composed through the method of “averaged out”. In particular, “if individuals high or low on a particular trait have similar facial appearance, the facial characteristics they have in common should be maintained in composites, while characteristics they do not share will disappear” (Little and Perrett 2007, p. 113). Analyses revealed individuals were able to make judgments on per-sonality traits based on facial information, particularly for the traits conscientiousness and extraversion. Another study, which is different from earlier works, was conducted by Paunonen et al. (1999). They manipulated specific facial features (eye size, eye spacing, and mouth fullness) and held all other facial characteristics constant. That is, they

⁴ However, in the present thesis, the agreement on personality judgments between others is more important than between other's impressions and self-reported evaluations.

⁵ For example, Rosenberg and Kagan (1989) reported strong relations between eye color and shyness. According to him, a high level of a neurochemical blocks the production of melanin in the iris resulting in a lighter eye color and is also related to an inhibited behavioral style.

⁶ For example, repeated facial expressions caused by specific emotions leaves a residual effect (i.e., particular wrinkle patterns) that in turn leads to certain personality perceptions.

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applied modern, computer-based, photographic retouching procedures and used one and the same face in all experiments, only with different specific facial features. Subjects had to rate all faces on 13 personality and 4 physical characteristics. Results showed models with large eyes were evaluated more feminine. With regard to personality traits, large-eyed models received higher ratings for example on the traits honesty, empathy, agreeableness, popularity, and extraversion. An overview of studies examining relationships between facial features and personality characteristics is summarized in table 1.

Table 1: Summary of Findings of Relations between Facial Features and Personality Traits

Study	Facial Feature	Personality Trait	Findings
Todorov, Baron, and Oosterhof (2008)	Brow ridge; Cheekbones; Chin; Nose sellion	Trustworthiness	Faces with high inner eyebrows, pronounced cheekbones, wide chin and shallow nose sellion are perceived more trustworthy than faces with low inner eyebrows, shallow cheekbones, thin chin, and deep nose sellion.
Guido and Peluso (2006)	Features of a babyfaced (see section 2.2.2) and maturefaced individual	Personality characteristics Credibility (babyfaced), trustworthiness and expertise (maturefaced) Physical characteristics: attractive (babyfaced)	Babyfaced endorser elicited more affect than maturefaced endorsers resulting in an attractiveness enhancement and increase of endorser's credibility for attractiveness-related products. Maturefaced endorsers were useful for endorsing products related to trustworthiness and expertise.
Rhodes et al. (2001b) and Grammer and Thornhill (1994)	Facial averageness; Face symmetry	Perceived health	Facial averageness and symmetry was related with health.
Zebrowitz et al. (2002)	Facial averageness (spatial average); Face symmetry	Intelligence	People judged intelligence from facial pictures accurately. Facial attractiveness is correlated with perceived intelligence. Facial symmetry and averageness are correlated with perceived intelligence.
Paunonen et al. (1999)	Eyes; Mouth	Personality characteristics: honest, empathic, agreeable, neurotic, intelligent, nurturant, likable, cultured, conscientious, dominant, extraverted, popular, vain, sensual; Physical characteristics: masculine, babyfaced, strong, attractive	Larger-eyed models were perceived as being more nurturant, honest, likable, empathic, agreeable, popular, extraverted, feminine, babyfaced, attractive and intelligent. A fuller mouth received higher ratings on attractiveness than a finer mouth. Masculinity, babyfacedness, and attractiveness are identified as mediator of the link between eye size and personality attribution.

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Study	Facial Feature	Personality Trait	Findings
Zebrowitz, Voinescu, and Collins (1996)	Eye size; Face symmetry	Perceived honesty	Large eyes and facial symmetry had significant effects on perceived honesty
Eagly et al. (1991)	Face symmetry; Eyes	Popularity, vanity	A symmetric face with large eyes is associated with a character of popularity and vanity.
Keating (1985)	Eyebrows; Eyes; Lips; Jaw	Dominance	The combination of all features to look similar to adults increased the perception of dominance. Variation in eye size or lip thickness served as dominance cues.
McArthur and Apatow (1983/84)	Eyebrows; Eyes; Nose; Mouth	Physical strength; Interpersonal dominance Honesty	The higher the vertical placement of these facial characteristics, the greater is the perceived physical strength and interpersonal dominance. An increased eye size received higher ratings on honesty.
Bradshaw (1969)	Forehead; Mouth	Happiness; Generosity; Trustworthiness; Stupidity; Foolishness	A low forehead received higher ratings on happiness, generosity, and trustworthiness. A wide mouth was associated with stupidity, foolishness and generosity.

Source: author's own selection

These studies focused only on a few specific facial features and assessed their relations to personality characteristics. For example, Todorov, Baron, and Oosterhof (2008) found strong relations between specific facial characteristics (i.e., higher inner eyebrows, pronounced cheekbones, wide chins and a shallow nose sellion) and ratings of trustworthiness. Moreover, they replicated their experiment in a neuroimaging study using functional magnetic resonance imaging (fMRI) technique with the difference that participants were not explicitly asked to evaluate the faces (see section 4.4.2 for an introduction to fMRI). Results indicate that the amygdala (i.e., brain area that is activated in the processing of faces expressing negative emotions) is involved in the implicit evaluation of face trustworthiness implicating that faces are spontaneously and automatically evaluated on trustworthiness.

Furthermore, Paunonen et al. (1999) concluded that physical attractiveness and babyfacedness (being described by specific facial features) have been found to affect personality judgments. In the case of attractive faces, the “what is beautiful is good” stereotype is identified in literature (Dion, Berscheid, and Walster 1972). With regard to this stereotype people tend to attribute positive characteristics to attractive people and negative characteristics to unattractive people (see section 2.2.3 for the attractiveness-halo effect). In the case of babyfacedness, the “babyface overgeneralization effect” is well established in research (Berry and McArthur

1985). Adults with such a babyish facial appearance have also distinct personality traits they are associated with including for example kindness and honesty (see section 2.2.2 for the babyface overgeneralization effect). Both facial factors (attractiveness and babyfacedness) are frequently examined in literature and their relations to personality trait inferences are discussed in the next sections. Overall, these findings in table 1 strongly support the fact that distinct facial characteristics can directly serve as personality cues.

2.2.2 The Babyface Overgeneralization Effect

A wealth of literature suggests that people base their judgments of others on their facial appearances. Research is basically concentrated on the impact of isolated facial features. A more complex issue is the influence of these facial characteristics when they appear in combination as it is a typical case. This section deals with a specific combination of facial features that as a whole represent the so-called babyface. Babyish facial characteristics are suggested to play an important role when individuals form personality trait inferences of others.

A human's face changes as it grows. Specifically, faces experience certain anatomical changes which reflect the maturation process. A mature face is usually defined by prominent cheekbones, thinner cheeks, a large chin, and thicker facial hair (Cunningham, Barbee, and Pike 1990). Therefore, an adult's facial appearance usually looks quite different than the face of a baby. The specific characteristics of babyfaces are summarized in table 2.

Table 2: Facial Characteristics of Babyfaces

Facial Feature	Specification
Cranial structure	Large prominent forehead, small receding chin
Facial outline	Round face
Eyes size	Relatively large eyes; lower placed eyes
Eyebrows	Thin eyebrows, located at a higher position
Nose	Pug nose: relatively wide and short nose
Lips/mouth	Smaller mouth with relatively full lips
Cheeks	Round, chubby cheeks
Skin quality	Soft and light skin

Source: authors own selection (Berry and McArthur 1986; Masip, Garrido, and Herrero 2004, for a review)

In general, babies are thought to be more vulnerable, naïve, kind, dependent than older individuals and people tend to behave accordingly by looking after the baby and educating

him or her (Masip, Garrido, and Herrero 2004). More importantly, no face is more likely to elicit favorable responses than that of a baby. However, adults can also have some of those babyish facial characteristics. If these features are observed by individuals other than a baby, they will induce the same process (Masip, Garrido, and Herrero 2004). Research has shown people strongly respond to these babyish facial features and relate them to babylike traits when such configurations appear out of the context in an adult face (Berry and McArthur 1985). This phenomenon is called the babyface overgeneralization effect. Again, this effect implicates that individuals whose facial characteristics resemble those of babies are generating responses that are overgeneralized. Particularly, people attribute childlike traits to babyfaced adults (Zebrowitz et al. 2003; Masip, Garrido, and Herrero 2004). Moreover, researchers have also reported considerable cross-cultural agreement on the effect that babyfaced individuals are associated with baby-like characteristics (McArthur and Berry 1987).

There are numerous studies assessing the impact of babyfaces on personality trait impressions. The work of Montepare and Zebrowitz (1998, p. 114ff) gives a very good overview how babyfaced individuals, also from other cultures, are perceived in terms of physical, social, and intellectual weakness. For example, individuals with round faces or big eyes were evaluated socially, intellectually, and physically weak. It is generally acknowledged that babyfaced individuals are perceived as more honest than maturefaced individuals (Berry and McArthur 1985; Berry and Brownlow 1989). Furthermore, highly babyish faces were judged to be more sincere, incorporating dimensions of warmth and openness, and less powerful (Berry 1991). Instead of schematic pictures of faces, as it was mostly presented in past empirical research, Masip, Garrido, and Herrero (2004) employed a more realistic technique by using computer-manipulated photographs with the same face manipulating all babyish facial features (cf. table 2) and by holding other characteristics constant. Results indicated that babyish faces were evaluated more honest, truthful, weaker, more submissive, more naïve, and warmer than mature faces – all results mirror the actual traits of babies. These findings confirm results of the most significant studies of Berry and McArthur (1986, 1985).

There are also a few studies that have assessed the effectiveness of babyfaced individuals in an advertising context. Based on the different perceptual nature of babyfaced and maturefaced individuals, Brownlow and Zebrowitz (1990) investigated how babyfaced and maturefaced spokespeople promote different types of commercials. Soundless videotapes of commercials with spokespeople were rated separately by different coders. Results clearly showed mature-

faced spokespeople presented in commercials were rated higher on expertise than babyfaced spokespeople. Further, babyfaced spokespeople were displayed in commercials that were rated higher on trustworthiness than maturefaced spokespeople.

Consistent with previous research showing babyfaced individuals are perceived naïve, kind, and honest, babyfaced spokespersons promoted appeals that were less expert and more trustworthy than maturefaced spokespeople. Another recent study by Guido and Peluso (2006) investigated the effects of babyfaced endorser on credibility, affect and purchase intention. Their methodology was quite different. Babyfaced and maturefaced endorsers were matched with brands of different product categories. Findings revealed that the babyfaced endorser elicited higher positive affective responses than the maturefaced endorser regardless of the product category. Most importantly, purchase intention was mostly influenced by the affective variable when babyfaced endorser promoted the attractiveness related product. Other authors suggest maturefaced endorsers should be selected for both expertise and trustworthiness related products whereas babyfaced endorsers are the best choice for attractiveness related products. In sum, these results support the babyface overgeneralization effect, according to which people with faces similar to those of babies are associated with babylike characteristics. Further, they indicate that babyfaces are not appropriate to promote brands from every product category.

2.2.3 The Attractiveness-Halo Effect

What is beauty? What makes a beautiful face appealing? These questions have been discussed for centuries (Langlois and Roggman 1990; Reber, Schwarz, and Winkielman 2004). From an evolutionary perspective, a quite common hypothesis is “the psychological mechanisms underlying attractiveness judgments are adaptations that have evolved in the service of choosing a mate so as to increase gene propagation throughout evolutionary history” (Thornhill and Gangestad 1999, p. 423; Langlois et al. 2000, p. 394ff, for a review of fitness-related evolutionary and socialization theories). Thus, according to mate-selection theory, attractiveness is important for males because it is an indicator of reproductive fitness of women⁷ (Langlois et al. 2000). The theory of good genes assumes further that judgments of attractiveness are highly decisive because attractiveness reflects information of an individual’s good health (Thornhill and Gangestad 1999; Langlois et al. 2000). Both refer to the

⁷ However, other motives besides attractiveness are important for female’s mate selection: dominance and status.

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fitness-related evolutionary theory and imply that facial attractiveness is an indicator of fitness, quality, health, and reproductive values (Langlois et al. 2000).

Numerous empirical studies have been carried out in order to identify characteristics that determine an individual's attractiveness. There has been some research that investigated different body aspects such as physique, waist-to-hip ratio, weight, arms and others (e.g., Franzoi and Herzog 1987; Tovee and Cornelissen 1999; Furnham, Lavancy and McClelland 2001) but most of the studies have focused on facial characteristics. Facial features are suggested to be more important for judgments of attractiveness than whole body appearances (Furnham, Lavancy and McClelland 2001).

A great deal of research investigated facial shapes as attractiveness cues. Researchers estimated at least one hundred studies (Jones et al. 2004). In literature both, symmetry and averageness⁸, of faces have been dominantly investigated and found to influence female and male attractiveness in a positive way (e.g., Langlois and Roggman 1990; Langlois, Roggman, and Musselman 1994; Grammer and Thornhill 1994; Rhodes et al. 2001a). One possible explanation is "that some standards of beauty may reflect biologically based preferences that have been shaped by human evolution" (Rhodes et al. 2001a, p. 611). That is, facial symmetry and averageness signal aspects of mate quality and thus an individual's preference would result in a reproductive advantage (Rhodes et al. 2001a). This preference is considered to be universal and indicates that average and symmetric faces are associated with attractiveness. Results clearly show that averageness and symmetry are attractive in Western cultures and also in Chinese and Japanese cultures (e.g., Rhodes et al. 1999; Rhodes et al. 2001a). Generally, most research demonstrated that there is a cross-cultural agreement on overall attractiveness ratings (e.g., Jones and Hill 1993).

Importantly, previous studies identified some gender differences in attractiveness ratings because females and males have basically other motives for mate selection, i.e., dominance and status for women and attractiveness for men. For example, Penton-Voak et al. (2001) found that men judged large eyes of a female face as attractive whereas findings of another study suggest that males with small eyes are perceived more attractive (Keating 1985). Table 3 summarizes findings from some studies and presents specific facial features that are perceived as attractive⁹.

⁸ In order to create average faces individual faces were combined into composites by calculating spatial distances; it is a pure technical definition of the mathematical mean; they are constructed photogrammetrically (Grammer and Thornhill 1994).

⁹ Not all existing studies are listed here. Only studies that showed highest agreement on the selected facial features are included.

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Table 3: Facial Characteristics of Male and Female attractive Faces

Facial Feature	Specification
Facial shape	Males and Females: symmetry, averageness Males: masculine shape – wide lower face Females: high forehead
Eyes	Females: large eyes including higher and wide eyes; greater inter-eye distance Males: small eyes
Cheekbones/cheeks	Males and Females: pronounced cheekbones Females: narrow cheeks and wide cheekbones
Eyebrows	Males: pronounced eyebrow (thicker) Females: higher eyebrows
Skin texture	Healthy looking skin ¹⁰ Females: smooth, light, homogenous skin; slightly reddish skin (compared to green and blue tones)
Chin	Males: large chin Females: small chin
Nose	Males: small nose area Females: small nose
Jaw	Males: square and large jaw Females: small and lower jaw (gracile)
Lips/mouth	Males: thin lips and wide mouth Females: larger and full lips
Hair	Females: light-colored hair

Source: author's own selection based on literature reviews (e.g., Cunningham 1986; Cunningham, Barbee, and Pike 1990; Grammer and Thornhill 1994; Thornhill and Grammer 1999; Paunonen et al. 1999; Fink, Grammer, and Thornhill 2001; Faure, Rieffe, and Maltha 2002; Jones et al. 2004)

The overview in table 3 shows that males perceive females with neonate facial features or babyfaces as highly attractive. However, the literature review further indicates a somewhat mixed pattern and also according to Faure, Rieffe, and Maltha (2002) there are still examples of contradictory relations. For example, on the one hand male faces with more mature or dominant features (e.g., square jaw, thin lips) are usually rated more attractive than round jaws or thick lips because attributes such as dominance, power or status are suggested to be elementary for male physical attractiveness (Keating 1985) and highly preferred by women. On the other hand Perrett et al. (1998) suggest that enhancing masculine facial characteristics increase not only dominance but also negative attributions such as coldness or dishonesty. Further, their findings reveal that feminized male faces are preferred to masculinized faces.

¹⁰ Healthiness of skin was manipulated by changing color and texture of the skin with the wavelet-based method (Jones et al. 2004, p. 572f).

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Paralleling this view, Cunningham et al. (1990) put forward the idea that masculine and feminine might reflect women's choice for dominant and cooperative partners at the same time. Specifically, they showed that higher attractiveness evaluations are associated with neonate features of men.

The ancient Greeks already believed that there is a relation between beauty and positive characteristics of a person (Langlois et al. 2000). The phenomenon “what is beautiful is good” was empirically tested in the study of Dion, Berscheid, and Walster (1972) showing that physically attractive individuals are assumed to possess more socially desirable personality traits and are more successful than unattractive individuals. Several studies have confirmed that associations between attractiveness and positive characteristics do exist. Based on these findings, a stereotype was identified, the well-acknowledged “attractiveness-halo effect” or also known as “what is beautiful is good” hypothesis (Dion, Berscheid, and Walster 1972; Langlois et al. 2000, for a meta-analytical review). With regard to more specific attributions, researchers have shown that physically attractive individuals are predicted to be extraverted, confident, and happy (Snyder, Tanke, and Berscheid 1977). Further, there is considerable evidence for the relation that attractiveness is a certification of health and honesty (Zebrowitz, Voinescu, and Collins 1996; Thornhill and Grammer 1999, for a review). Table 4 lists further examples of positive traits that are attributed to more attractive individuals¹¹. According to table 4 and especially the results of meta-analyses among other studies attractiveness is associated with positive dimensions (e.g., Langlois et al. 2000).

Table 4: Positive Traits attributed to attractive Individuals

Positive Attributes	Source
More popularity, intelligence, and dominance; higher likeability, extraversion, nurturance, honesty, empathy, agreeableness, and conscientious-ness; skillfulness, rational, hardworking, scientific ability, ambitious, good grades, career success, academic performance, maturity, alertness, competence, motivation, and suitability as an employee; confidence, health, happiness, and more successful life outcomes, etc.	e.g., Zebrowitz et al. 2002; Snyder, Tanke, and Berscheid 1977; Zebrowitz, Voinescu, and Collins 1996; Paunonen et al. 1999; Thornhill and Grammer 1998; Eagly et al. 1991; Feingold 1992; Langlois et al. 2000; Dion, Berscheid, and Walster 1972

Source: author's own selection

In contrast to the attractiveness-halo effect, there are three paradigms restricting the importance of attractiveness in social interaction (Langlois et al. 2000, for a review): “Beauty is in the eye of the beholder”, “never judge a book by its cover”, and “beauty is only skin-deep”.

¹¹ Not all existing studies are listed here.

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However, Langlois et al. (2000) also weakened the arguments at the same time: If beauty is only in the eye of the beholder, judgments of attractiveness should not show any consistencies among raters but reliability of the coefficients is given in almost every study. Judging others based on their appearance has been further assessed in numerous studies - robust effects of attractiveness on personality trait inferences have been reported. According to the last maxim there is no necessary correspondence between external appearance and the individual's personality. Some studies also identified relations between attractiveness and actual behavior. Therefore, these maxims seem to be refuted by several meta-analyses and are considered to be age-old (Langlois et al. 2000, for a review of meta-analyses).

Another research stream focused on self-evaluations when attractive individuals are judged. Many researchers have documented negative effects as a consequence of exposure to attractive individuals. Especially, when highly attractive endorsers are selected by marketers, consumers tend to compare themselves with these ideal images and experience negative feelings (e.g., Stice, Spangler, and Agras 2001; Halliwell and Ditmar 2004). Referring to theories on social comparison jealousy, Salovey and Rodin (1984, p. 780) argue that "when we compare ourselves to others and find that we do not measure up, we may experience envy and jealousy." In case of social comparison a variety of negative emotions such as helplessness, desire for revenge, and depression can occur (Salovey and Rodin 1984). More importantly, Salovey and Rodin (1984) claim that jealousy can be a further driver of negative evaluations of the attractive other because subjects do not want to be friends with anyone who is superior to him or her and therefore reduce evaluations of the other's character. Thus, attractiveness might also relate to negative judgments of others and weaken their personality traits.

In sum, researchers suggest that attractiveness plays a significant role in social perception. People tend to be associated with more positive personality traits when they are judged to be attractive, however, when individuals compare themselves with highly attractive others, negative evaluations might occur.

2.3 Summary and Relevance for the Empirical Studies

According to Gestalt psychologists and the literature on face processing, the human face can be defined as a number of elements chosen and blended into a holistic face design to achieve a particular visual effect. This dissertation sets out from this holistic face processing perspective and thus the fact that facial features are glued together into a gestalt rather than processed independently from one another. This implies that the perception of a face part is influenced by the processing of other face parts (Goffaux and Rossion 2006). Therefore, the overall variation in the holistic facial configuration will have the most impact on how faces are perceived. Specifically, research has been carried out on the following two characteristics of faces related to attractiveness and personality traits: facial masculinity/femininity and facial maturity/babyishness. According to Little, Burt, and Perrett (2006), both have many common features, for example, facial masculinity is often associated with specific facial features that represent an individual's maturity. Most studies agree on facial features that are characteristic for masculine and feminine faces as well as maturefaced and babyfaced individuals. However, except for the categorization of babyish vs. mature and feminine vs. masculine face types, the literature does not reveal any other information on typifications. One goal of the present empirical study is to close this research gap and to identify a more inclusive taxonomy of holistic face types (see section 4.1 for Study I).

According to the literature review, the face attracts a lot of attention and clearly underscores its high value in transmitting meanings about the person. When viewing at an individual's face people form an immediate impression of the personality. Most of the researchers have concentrated on distinct facial features that were shown to work as personality cues. However, they could not account for the interaction with other facial characteristics thus ignoring the holistic nature of face processing. Numerous authors focused only on attractive faces, babyish/mature and feminine/masculine face types and related them to personality traits. Most of them agreed on their given links to personality attributions. Identifying other holistic face types and systematically link them to specific personality traits is the second goal of this dissertation (see section 4.2 for Study II).

Overall, there is a considerable amount of research investigating the face as a source of information. In case of print, TV, and online advertisements, facial appearance and impressions are quite important. Firms spend a lot of time and money on finding the ideal

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spokesperson to promote a brand. Research indicates that managers are guided by the question whether the spokesperson's facial appearance reinforces the image of the advertised product. Faces do not only create impressions about the spokesperson but additionally influence consumer inferences about the promoted brand. This is an enormous challenge to advertising and branding stakeholders who are in charge of identifying, selecting and employing human models and their faces for generating impressions with consumers and attaching them to brands (e.g., Baker and Churchill 1977; Kahle and Homer 1985; Kamins 1990; Englis, Solomon, and Ashmore 1994). To shed more light on the impact of spokesperson's faces on brand perception, chapter 3 will present how desired brand impressions can be created.

3. The Employment of Endorser Faces for Creating Desired Brand Impressions

This chapter introduces brand personality as a strategic communication concept that has gained a lot of attention in academic research and marketing management. Here, the emphasis is placed on how endorser faces that are associated with specific personality traits can contribute towards desired brand impressions. More precisely, several theoretical models are discussed which aim at improving managerial guidelines for selecting endorser faces. These findings will later be integrated in the discussion section of the empirical studies in chapter 4. Section 3.1 introduces the brand personality concept with its specific dimensions including details about the formation and measurement of brand personality. An additional focus is on the fundamental models explaining the effectiveness of brand personality with a main emphasis on the relationship between brand personality and consumers. The next section 3.2 discusses interaction effects between endorser faces and brand impression. Specifically, different types of endorsers are introduced (section 3.2.1) and how meanings can be transferred from endorser to brands is presented (section 3.2.2). The model underlying the endorsement process is described in section 3.2.3. Also source effects including endorser's credibility, attractiveness, and similarity on brand impressions will be explored by presenting findings of empirical studies (section 3.2.4). Following the match-up hypothesis, which is a highly relevant model explaining interaction effects between the endorser and brand (section 3.2.5), a summary of the sections is given and their relevance for the empirical studies is discussed (section 3.3).

3.1 Brand Personality as a Communication Concept

3.1.1 The Brand Personality Construct

Many consumers perceive Coca-Cola as a cool, all-American brand, whereas its competitor Dr. Pepper appears young, exciting, and hip. Apple tends to be young and sophisticated whereas IBM is considered to be older and competent (Aaker 1997). At a time when many brands become quite similar in function and technical attributes and consumers are confronted with information overload, the only difference between those brands can be established by humanizing the brand. Humanizing the brand simply means that brands can develop and be associated with certain human characteristics. Advertisers aim to develop and reinforce a

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personality for their brand in order to differentiate it from competitive brands in a specific product category. By creating a favorable brand personality, brands can take a distinctive positioning in the marketplace which allows marketers to gain market share and ask for higher prices (Aaker, Batra, and Myers 1992).

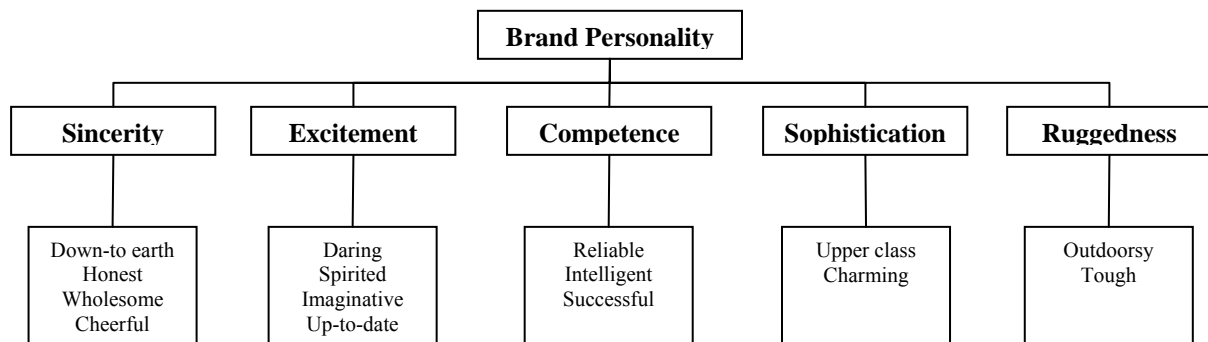
It is well-acknowledged that consumers purchase brands for different reasons that are classified in functional, experiential, and symbolic benefits (Park, Jaworski, and MacInnis 1986; Keller 2003). Functional benefits refer to the problem-solving competence of a brand, correspond to product attributes, and reflect concrete performance aspects. They often generate associations linked to basic motivations and have a rather intrinsic nature of product consumption. Experiential benefits relate to the sensory enjoyment of product consumption and satisfy experiential needs and cognitive arousal. Another extrinsic advantage of product consumption refers to the symbolic benefit that corresponds to non-product related attributes. Moreover, symbolic benefits reflect the underlying needs for social approval, personal expression and self-esteem shown to others via brand (Park, Jaworski, and McInnis 1986; Keller 1993). Overall, brand personality is considered to possess symbolic values rather than utilitarian functions (Keller 1993) although it can indirectly provide functional benefits. Nowadays, consumers purchase brands not only for their functional values but more importantly for their symbolic brand benefits (Biel 1993). Those are primarily addressed by advertising strategies.

In consumer behavior research, the construct of brand personality has gained a lot of attention and is very well established in literature (e.g., Aaker 1997; Johar, Sengupta, and Aaker 2005; Swaminathan, Stilley, and Ahluwalia 2009). Brand personality is defined as “the set of human characteristics associated with a brand” (Aaker 1997, p. 347) and refers to people’s feelings about a brand that can evolve from what people think the brand is or does (Keller 2003). More precisely, researchers have clearly suggested that brand personality is a communication vehicle for consumers to express their actual or ideal selves (Belk 1988; Malhotra 1988; Aaker 1999). Just as humans have individual characteristics that define their personalities, brands can do so as well. However, human personalities and brand personalities are different in their formation. While human personalities are explicitly formed and adapted from an individual’s behavior, physical appearance, attitudes and beliefs, and other demographic characteristics (Park, Jaworski, and McInnis 1986), brand personalities are formed by any direct or indirect relation the consumer has with the brand (Plummer 1985). Researchers believe that perceptions of brand personality are influenced directly through human

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personalities of endorsers, typical users of brands or company employees (e.g., Aaker 1997). According to McCracken (1989), this is the way how personalities can transfer from an endorser to a brand. Aaker (1996) distinguishes between product-related (e.g., product category, package, price, attributes) and -unrelated characteristics (e.g., endorser, age, ad style, county of origin, company image) as primary drivers of brand personality. Further, Levy (1959) proposed demographic characteristics of endorsers or typical users highly influence the personality associated with the brand. It is also suggested that the perceived brand personality is affected in an indirect way through pricing, distribution, and marketing communication programs such as packaging design or brand logo (Batra, Lehmann, and Singh 1993).

For the measurement of brand personality several authors employed different approaches by constructing long lists of adjectives. However, they did not provide sufficient empirical evidence clearly related to brands (e.g., Wells et al. 1957; Plummer 1985; Batra, Lehmann, and Singh 1993). Thus, Aaker (1997) developed a measurement scale of brand personality by analyzing the brand personality structure of hundreds of commercial brands as carriers of culture and identified five core dimensions, i.e., sincerity, excitement, competence, sophistication, and ruggedness that are proved to be reliable and valid (see figure 3).



Source: Aaker 1997, p. 352

Figure 3: A Brand Personality Framework

The first factor, sincerity, includes items such as down-to-earth, honest, wholesome, and cheerful. Excitement is represented by the attributes daring, spirited, imaginative, and up-to-date/contemporary. Competence is typified by attributes such as reliable, intelligent, and successful. Sophistication is reflected by the items upper class and charming. The last factor, ruggedness, is represented by attributes such as outdoorsy and rugged. A significant number of studies in consumer research using Aaker's framework has emerged, supporting the brand

personality construct as a valid measure (e.g., Aaker, Benet-Martinez, and Garolera 2001; Johar, Sengupta, and Aaker 2005; Yorkston, Nunes, and Matta 2010). Although a human's personality trait structure is suggested to be universal (McCrae and Costa 1997), there is still a lot of research needed to investigate whether all brand personality dimensions are applicable across cultures (Sung and Tinkham 2005). However, some studies have shown that most of the brand personality dimensions overlapped with Asian countries and Spain. Importantly, one or two dimensions were added or had to be replaced with cultural specific personalities (Aaker, Benet-Martinez, and Garolera 2001; Sung and Tinkham 2005; Shen, Bei and Wu 2006).

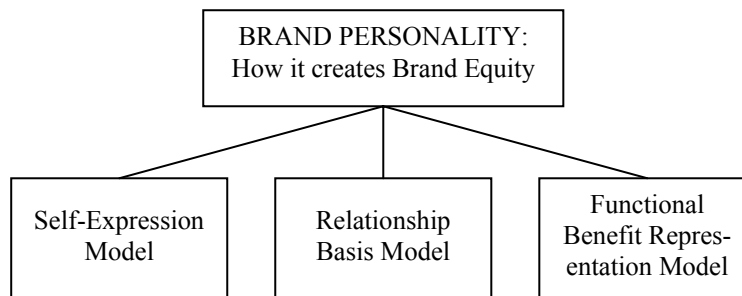
In general, brand personality is believed to build trust and loyalty (Fournier 1998) and strengthen consumer preference (Aaker 1999). Further, findings revealed a positive impact of brand personality on perceived quality (Ramaseshan and Tsao 2007) and other consumer responses that are presented in more detail in the section 3.1.3. Aaker (1996) proposes building strong brands needs to clearly differentiate them from competitors' brands. This can support a price premium or maintain a price line. Differentiation can be achieved by distinctive brand personalities that are suggested to belong to the set of brand equity measures relating to brand strength. Building a strong brand personality is not the primary goal of brand managers, rather, by analyzing their target consumers, they aim to create a personality that matches the typical consumer. In early works, a considerable amount of research was conducted on self-congruity and demonstrated that consumer's preference is higher for brands associated with a set of personality traits congruent with their own (e.g., Levy 1959; Sirgy 1985; Belk 1988). In other words, consumers purchase brands with which they can identify themselves the most, and, the ones which in turn can increase their chances of satisfaction.

3.1.2 Theoretical Models Explaining Brand Personality Effectiveness

Consumers are more likely to perceive and evaluate a brand along its symbolic attributes first, for example with regard to its brand personality, followed by an evaluation of its functional attributes (Sirgy et al. 1991; Mangleburg et al. 1998). Researchers explain this finding by proposing that symbolic attributes are easily processed due to their self-reference than functional attributes that are more cognitively processed and less related to consumer's self. This section links brand personality to consumer's self and explains why brand personality matters and finally, how it can result in building strong brands. Figure 4 represents an

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overview of the models that explain how brand personality can create brand equity. The models will be discussed in the following:



Source: Aaker 1996, p. 155

Figure 4: Brand Personality creates Brand Equity

The Self-Expression-Model

The consumer behavior literature has increasingly shown that the driving force of consumers' purchase intentions is the motivation to express their own selves. Consumers express themselves in many different ways including job choices, friends, attitudes, clothing style, and others. More importantly, brands are well-acknowledged as vehicles for consumer's expression of his or her self-concept. The self-concept might refer to their actual (how consumers see themselves presently), social (how consumers feel others see them), social ideal (how consumers would like others to see them) or ideal (how consumers would like to see themselves) self-image admired by consumers (Sirgy 1982; Sirgy 1986). All variants had an influence on brand attitude, but most empirical support was found for the actual self-concept with the present actual perception of oneself or the ideal self-concept with an idealized self (Sirgy 1982). The driving forces behind the self-concept are justified through basic principles of human beings¹² (Sirgy 1986; Hieronimus 2003). Consumers are willing to preserve their self-concept and have a need for consistency implying a congruity between their self-concept and external stimuli (refers to actual self-concept). The motivation for self-consistency draws from the human need for security. Consumers aim to enhance their self-concept (refers to ideal self-concept) (Hong and Zinkhan 1995). Self-esteem motivation is a fundamental principle in human's life. A high discrepancy between actual and ideal self-concept can result in lower self-esteem. Thus, purchasing goods can help to overcome the discrepancy and result in higher self-esteem (Higgins 1989).

¹² Basic needs of humans are presented in Maslow's hierarchy of needs and include for example self-actualization, self-esteem, belongingness, physiological and safety needs (Maslow 1943).

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Further, McCracken (1989) claims consumers prefer products and brands with meanings that correspond to individuals they represent or want to become in order to sustain their self-identity. For example, purchasing an Apple computer is a statement and an expression of consumer's personality and lifestyle. An Apple user expresses his or her personal identity of being creative, easy and willing to go against the grain (Aaker 1996). However, Aaker (1996) also acknowledges the fact of multiple personalities a person can possess. Therefore, Apple users are not "pure Apple types" rather it seems more reasonable to view an Apple personality as one part of consumer's self-concept. In order to be effective, a brand personality should be important for the person using the brand. Aaker (1996) mentions the example that a brand with a reliable and distinguished personality would not be noticed by consumers who want to express their youth. Hence, any brand personality might facilitate identity expression when there exists some self-image congruence (Aaker 1996; Sirgy et al. 2000). Self-congruity is high when there is a match between consumer's self-concept and the personality of the given brand. On the contrary, when brand-consumer image does not match, low self-congruity¹³ occurs (Sirgy et al. 1997).

In general, marketing research offers considerable empirical evidence that self-congruity has a strong impact on consumer behavior (Bauer, Mäder, and Wagner 2006 for a review). For example, self congruity plays an important role in purchase motivation (Malhotra 1988). Much research has uncovered relations between self-congruity and brand choice, preference, and loyalty (e.g., Sirgy 1985; Ericksen and Sirgy 1992; Sirgy and Johar 1999; Sirgy et al. 2000; Limon, Kahle, and Orth 2009), resulting in better product evaluation, greater satisfaction, and higher purchase intention. Other studies have focused on the congruence between store image and self image that resulted in better product perception and purchase intention (e.g., Bloemer and Oderkerken-Schroder 2002; Orth, Limon, and Rose 2009).

Based on the importance of brand personality, many studies assessing self-congruity between consumer and brand personality use Aaker's (1997) five dimensions. For example, Kressmann et al. (2006) measured self-congruity using the difference of scores between brand personality and consumer's self. Findings revealed a direct effect of self-congruity on brand loyalty. Higher preference for brands with personalities matching their own was also found by Maehle and Shneor (2010) and Kirmani and Shiv (1998). Other researchers included brand personalities of a company in their study and found out that brand personality of a product is more significant in affecting purchase intention than the company brand personality. Furthermore, self congruence with both, product and company brand personality resulted in higher

¹³ Both terms self-image congruence and self-congruity are used interchangeably in literature.

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purchase intention (Wang, Yang, and Liu 2009). In another study, authors assessed the influence of self-congruity on store loyalty (Morschett et al. 2008). They demonstrated the congruence between the personality of a store and the self-concept of the target customer is relevant for generating store loyalty.

In sum, studies clearly highlight the important role of self-congruity for brand managers. In order to enhance brand preference, choice and loyalty, managers should adjust brands and their personalities as portrayed in marketing communications to target consumer's personalities.

The Relationship-Basis-Model

The concept of a relationship between a brand and a person represents another approach for explaining how the brand personality concept might work. The kind of relationship can be compared to the relationship between two individuals. There is a relationship between the brand-as-person and the consumer based on symbolic benefits (i.e., brand personality) or a brand-consumer relationship based on functional benefits, similarly how two people can have a business relationship (Aaker 1996). In contrast to the self-expression model with a focus on the brand personality for self-congruity, the relationship-basis-model is focused on the relationship with the brand. Fournier (1998, p. 366) explicitly distinguishes the relationship-basis-model from the self-expression-model by saying "consumer-brand relationships are more a matter of perceived goal compatibility than congruence between discreet product attributes and personality trait images."

Analogous to a person's behavior and his or her impact on others' perception, Fournier (1998) suggests that a brand's behavior can also affect its perceived personality. For example, if a brand is frequently on sale and offers deals, it might be seen as a cheap or uncultured brand or if it is extensively advertised, it might be perceived as an outgoing and popular brand. The goal of brand managers is to create brand loyalty. This can be enhanced by supporting consumers to build relationships with brands (Kressmann et al. 2006). The strength of such relationships is known as brand relationship quality (Aaker 1996; Fournier 1998). The most significant and well-acknowledged work is conducted by Fournier (1998)¹⁴. She developed six dimensions of brand relationship quality: (1) love and passion describing an intense emotional bond between consumer and brand and the intolerance for separation; (2) personal commitment to the brand which consumers feel responsible for and aim to improve or maintain the quality of the relationship; (3) behavioral interdependence between the consumer

¹⁴ Other important measurements of brand relationship were introduced by Aaker (1996) and Blackston (2000).

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and the brand describing a mutual dependency; (4) self-concept connection and the ability of the brand to address facets of consumer personality; (5) intimacy, referring to the extensive knowledge that the consumer has about the brand; and (6) partner quality, which relates to the consumer's evaluation of the brand quality and reliability of brand's messages. The first three dimensions are quite similar to brand loyalty whereas the other three reflect different measures of relationships (Aaker 1996). For example, a consumer is highly involved with cars and follows all the news about innovations relating to cars. This consumer owns a BMW. Therefore, it is very likely that he expresses deep and strong feelings about the brand BMW, knows all details of his BMW, takes care of his BMW (in terms of maintenance), feels he relies and depends on his BMW to maintain his way of living, and treats his BMW as a good friend or partner (Kressmann et al. 2006). This example gives a good idea how relationships with a brand can look like. However, the high number of dimensions and items behind them makes it quite hard for empirical studies to employ all items¹⁵ (Hieronimus 2003).

Recent research on brand relationship quality has demonstrated that this construct explains substantial variance in consumer behavior (e.g., Aaker et al. 2004; Kressmann et al. 2006). For example, Aaker et al. (2004) investigated the influence of brand transgression on brand relationship quality. Brand transgression "refers to a violation of the implicit or explicit rules guiding relationship performance and evaluation" (Aaker et al. 2004, p. 2). The study identified interaction effects of brand personality and transgression acts; for example, consumer's relationship to sincere brands was stronger in the case of no transgression compared to exciting brands and in case of transgression, after an apology, consumers felt a stronger bond with the exciting brand than sincere brand.

Research from interpersonal relationships suggests that perceptions of similarity can enhance the relationship quality between partners. According to Kressmann et al. (2006), the positive effects from similarity should also be translated to consumers' relationships with brands. Empirical evidence has shown a greater self-congruity with a brand resulted in a higher quality of the relationship with that brand. Kressmann et al. (2006, p. 962) argues that this finding clearly integrates "the emerging construct of brand relationship quality into self-congruity theory", suggesting a match in relationships with brands is also fundamental for enhancing brand loyalty.

In sum, instead of separating the brand-relationship-model and the self-expression-model from each other, authors should interpret them as supplementary (Hieronimus 2003).

¹⁵ Most of the empirical studies are using a part of these dimensions.

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Hieronimus (2003) further proposes that product categories with a strong symbolic benefit (i.e. strong brand personality) can be better explained through the self-expression-model whereas goods highly related to trust are better explained through the relationship-basis-model.

The Functional-Benefit-Representation-Model

Brand personality reflects symbolic meaning and it can indirectly produce and reflect functional meaning (Aaker 1996; Bhat and Reddy 1998). The functional-benefit-representation-model refers to functional benefit of brand personality whereas the self-expression-model and the relationship-basis-model employ brand personality with its symbolic benefits and link it with the consumer. Aaker (1996) mentions the example of the Harley-Davidson with its rugged, macho, freedom-seeking brand personality that characterizes the brand as powerful and sturdy. Without these brand personalities Harley Davidson's product attributes or functional benefits would be less convincing. Also in the case of "Meister Proper", the benefit of its cleaning power is implicitly communicated via brand personality (Hieronimus 2003). Creating brand personalities that communicate functional benefits is easier or more trustworthy¹⁶ than presenting functional benefits of the product in a quite obvious way. Moreover, brand personality is suggested to be remembered quicker than those functional facts (Aaker 1996). Further, Hieronimus (2003) emphasizes the characteristic of brand personality to serve as an information chunk for functional benefits. Information chunks are defined as supportive information in forming brand attitudes that simplify the decision-making-process. The more easily the information can be recalled in consumers' memory the higher is the probability to influence decision-making. In this context, Aaker (1996) explicitly highlights the role of visual stimuli in order to stimulate consumer perceptions by creating a visual image in the minds of consumers in order to build a brand personality. Visual symbols such as a logo can especially induce associations also linked to brand personality. Research on visual stimuli has demonstrated that different shapes, colors or even typefaces have an impact on the brand perception (e.g., Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008). For example, the Michelin man is represented as enthusiastic and energetic in his visual image that in turn influences the perceived functional benefits implying a tire with power and strength. However, endorsers can also serve as visual stimuli supporting brand perceptions in different ways – especially through their own personality. For example, in the

¹⁶ Consumers often doubt on the credibility of advertising messages and assume an exaggeration of product benefits (Hieronimus 2003).

case of insurances a credible and trustworthy endorser would enhance the functional benefit of insurances. It is further acknowledged that product attributes are easier to be disproved by consumers than personalities generated through marketing communication (Hieronimus 2003).

Overall, the functional-benefit-representation-model favors brand personality as a vehicle for communicating functional benefits that are represented mostly through visual stimuli.

3.1.3 The Influence of Brand Personality on Consumer Response

A considerable stream of empirical work using Aaker's brand personality framework has emerged across several disciplines including consumer behavior, brand management, social responsibility, tourism, sports marketing, and international marketing (e.g., Sung and Tinkham 2005; Keller and Richey 2006; Madrigal and Boush 2008; Wang and Yang 2008; Carlson, Donavan and Cumiskey 2009; Wang, Yang and Liu 2009). All these studies generally agree that brands have personalities like humans do. However, this section summarizes empirical results of the most significant and/or recent studies with a brand related consumer focus. Findings clearly support the notion that brand personality has an influence on a variety of consumer-driven outcomes. These consumer responses can be classified in different consumer behavioral measurements including consumer attitudes, purchase intention, brand preference, and perceived quality. Furthermore, this section presents several individual variables of consumers that influence brand personality effects such as attachment styles, personality traits and implicit theories of consumers' selves (e.g., Swaminathan, Stilley, and Ahluwalia 2009; Yorkston, Nunes, and Matta 2010; Maehle and Shneor 2010). Exemplary studies of these findings are presented in this section¹⁷.

First of all, authors found that a strong and positive brand personality can evoke favorable consumer responses (e.g., Freling and Forbes 2005; Wang and Yang 2008). When consumers encounter a strong, positive brand personality they respond with more favorable, unique, strong, and congruent brand associations. This brand personality effect emerged independent of the brand personality dimension suggesting that any brand personality dimension as long as it appears strong and favorable, is likely associated with positive consumer responses (Freling and Forbes 2005). In another study, Ramaseshan and Tsao (2007) also identified positive brand personality effects, namely on perceived quality. Specifically, their results revealed that

¹⁷ The studies discussed in this section are based on author's selection.

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among the five brand personality dimensions, “excitement” and “sophistication” were the dimensions which were associated with perceived quality the most.

Aaker (1999) investigated the self-expressive use of brands and found that brand personality has an influence on consumer attitudes. Results indicated that the self is a malleable or working concept and moreover supported that the self-expressive use of brands varies related to different situations. Specifically, Aaker (1999) showed that attitudes toward brands with a specific brand personality elicited more favorable responses in case of self congruity (match brand and consumer personality) and situation¹⁸ congruity (match situation and consumer personality). Another study extended Aaker’s framework by developing a scale to measure gender dimensions of brand personality (Grohmann 2009). Her results suggest, when gender dimensions of brand personality are congruent with consumers’ sex role identity consumer responses are positively influenced including “favorable brand attitude, stronger brand preferences over competing brands, greater brand affect and trust, higher degree of attitudinal and behavioral brand loyalty, stronger purchase intentions, and increased likelihood of positive word-of-mouth communication” (Grohmann 2009, p. 114). In the context of brand extensions, her findings further reveal that a fit between parent brand personality and gender perception associated with the extension enhances purchase intentions. Further, the self-image congruence with product-/parent-brand personality positively affected purchase intention (Wang, Yang, and Liu 2009). Thus, these studies confirm earlier findings by showing that consumers use brand personality dimensions in order to express an important dimension of their self-concept.

A very recent study has assessed which types of consumers are probably more influenced by a brand personality (Swaminathan, Stilley, and Ahluwalia 2009). Types of consumers were differentiated through interpersonal attachment styles – anxiety and avoidance¹⁹. In particular, the key finding is that brands help specific types of consumers (i.e., high anxiety) by supporting them convey their personality to others via their association with the brand or more precisely via the symbolic use of sincere and exciting brand personalities, especially in public consumption situations. Furthermore, a brand associated with a brand personality, which

¹⁸ Scenarios included types of dinner representing brand personality dimensions. For example, “the sincerity cue was a homey dinner during the holidays with the whole family and grandparents, the excitement cue was a fun dinner at a hip club with a date...” (Aaker 1999, p. 49)

¹⁹ “The anxiety dimension (the self view) assesses the degree to which the self is perceived as being worthy or unworthy of love...” and the “avoidance dimension of attachment captures the individual’s view of others. Avoidant style individuals have a negative view of others...” (Swaminathan, Stilley, and Ahluwalia 2009, p. 986)

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provides a potential for forming relationships with others, results in an enhancement of consumer's brand attachment, purchase intention, and brand choice. In another study, researchers found specific brand personalities are preferred by different types of consumers (Maehle and Shneor 2010). For example, results indicated that individuals characterized as integrators with a "relational focus, personal involvement and social perspectives" had higher preferences for brands scoring high on sincerity being indicative for "strong social and people orientation, cooperative tendencies, and harmony seeking" (Maehle and Shneor 2010, p. 45). According to Aaker (1999), brand personality is relatively enduring, distinct and fixed although she acknowledges the fact "personality traits are perceived more as temporary states than permanent traits" (Aaker 1999, p. 46). However, other researchers offer evidence that consumers consider brand personality as malleable, changeable and dependent on advertising characteristics such as endorser personality (e.g., Batra and Homer 2004; Johar, Sengupta, and Aaker 2005; Yorkston, Nunes, and Matta 2010). One recent and significant work was conducted by Yorkston, Nunes, and Matta (2010) who looked at the role of brand personality from a different perspective, namely with a brand extension focus. They assessed whether consumer's individual beliefs regarding the malleability of their own personality traits (fixed/not changeable versus malleable/dynamic) – known as consumers' implicit theories of the self – can affect their evaluations of brand extensions. Results confirm the more malleable the consumer views his or her individual personality trait, the more likely he or she is to believe a brand is malleable as well. When consumers think that brand traits are malleable they are more willing to accept a brand's change or brand extensions, because they are more flexible toward change. As a further result, these consumers perceive a higher fit between the parent brand and the extension but they also have limits how far a brand personality can be stretched relative to the parent brand.

Another study examined how brand personality inferences change in response to incoming brand information after initial inferences have been formed and why some personality traits are stable and others not (Johar, Sengupta, and Aaker 2005). They found that updating brand personality is possible and depend on the type of incoming brand information (e.g., positive versus negative) and the way the respondent views him or herself (e.g., which traits are accessible). For example, participants with the specific personality trait lowered their initially positive brand personality evaluation only when they were exposed to negative information, thus disconfirming information. In the case of positive information, the personality trait rating did not change because it was consistent with the accessible information (brand personality). When a personality trait is not accessible, participants did not update their brand personality

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inferences on the basis of the new information, “whereby information is examined for overall evaluative implications rather than for trait-related inferences” (Johar, Sengupta, and Aaker 2005, p. 467).

Further, Batra and Homer (2004) showed in their work that desired brand personality impressions were reinforced with specific advertising characteristics (such as endorser personality). These ad-evoked brand personality impressions also had a greater impact on brand preferences when they matched consumer’s schema of the brand and under the condition of high social consequences²⁰. However, this occurred only for sophisticated brands and not for brands associated with fun.

Thus, these studies show that by humanizing the brand, brand personality can work as a strategic communication concept to build and strengthen consumer’s relationship with the brand, which is the reason why brand personality is embedded in the empirical studies II-IV. Moreover, brand personality works as a vehicle for consumer self-expression and thus is essential for them to express different aspects of his or her self (Belk 1988; Aaker 1997). As a means for signalling their self-concept to others, brand personality is used by certain consumer types as a means for managing relationships with others (Swaminathan, Stilley, and Ahluwalia 2009).

Further, findings identify the malleable character of the brand personality concept and indicate that consumers update their brand personality traits depending on the incoming brand information and other advertising characteristics such as the endorser personality. By including endorsers and their personality traits personality traits are made accessible in respondent’s mind that have been found to cause different responses in updating brand personality inferences (Johar, Sengupta, and Aaker 2005). The fact that personality traits associated with brands are more flexible also supports the motivation to investigate differences in brand personality perception by priming brands with endorsers - this is the aim of Study III and IV (see section for 3.2.5 priming theory).

In sum, the well-acknowledged brand personality concept plays a crucial role in explaining consumer behavior. Especially, when target consumers are well understood, it is a powerful way to evoke favorable brand related consumer responses for an effective brand positioning and a differentiation in a highly competitive marketplace.

²⁰ Consumption occasion was manipulated with including scenarios saying that the snack products are purchased for a party (low social consequence) versus that the snack is for a party that the respondent will host soon (high social consequence) (Batra and Homer 2004).

3.2 Interaction Effects between Endorser Faces and Brand Impressions

3.2.1 The Role and Type of Endorsement for Brand Communication

Companies often use product endorsers to attract consumer's attention and to shape their attitudes. Endorsers, spokespeople or models, often used interchangeably, present information about the product and are primarily chosen to generate favorable advertisement responses and product evaluations (Dean and Biswas 2001). Researchers have also shown that on average the employment of celebrities in advertisement campaigns result in higher financial returns for the companies (Ratneshwar and Chaiken 1991; Erdogan, Baker, and Tagg 2001). Endorsers jointly presented with the product can be a reason enough for buying it (Blackwell, Miniard, and Engel 2001). For example, the sales of sneakers went up rapidly simply because they had Michael Jordan's name on them (Givhan 1997). From a practical and scientific perspective, celebrities or testimonials are allocable to brands quite easily and quickly (see section 3.2.3.1). For example, Franz Beckenbauer is known for O2, Thomas Gottschalk for Haribo or Steffi Graf for Barilla. When consumers walk along the supermarket, they might remember and associate these famous people with those brands, and their motivation to identify with them might in turn result in an increase of sales by claiming some of these transferred meanings for themselves (McCracken 1989). As McCracken (1989) emphasized in his early work, endorsers can transfer personality trait inferences to brands, and thus, endorsers are considered to be a rich source of meaning to the companies that want consumers to be connected with their products. For example, the actress Kimberly Quinn was selected to endorse the brand Tic Tac (breath mints) in its new commercial, because it was believed that she "reflects the attributes of the brand in terms of being friendly, approachable and trustworthy" (Vranica 1999).

In general, the literature distinguishes four different types of endorsers (Friedman and Friedman 1979):

- (1) the celebrity,
- (2) the professional expert,
- (3) the typical consumer, and
- (4) non-human endorsers.

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A *celebrity* (or testimonial) is any individual who is well known to the public for his or her achievements in any area other than the product that he or she is endorsing (actor, athlete, entertainer, etc.) (Friedman and Friedman 1979). Basically, these famous individuals enjoy public recognition and use this appreciation on behalf of the endorsed product by appearing with it in print-/TV-advertisement (McCracken 1989). Certainly one of the most popular celebrities in the United States is basketball player Michael Jordan, who was hired to endorse brands including Nike, McDonald's, Quaker Oats, Sara Lee, General Mills, Wilson Sporting Goods, and MCI (Blackwell, Miniard, and Engel 2001). In general, leveraging the endorsement of products by celebrities as a marketing practise is a popular communication strategy. For example, content analyses of advertisements in the United States highlight the important role of celebrities, and furthermore, authors also found that this endorser type is used internationally (Zandpour, Chang, and Catalano 1992; Iyer and Banerjee 1994). During the prime time, celebrities are in fact represented in one of five TV advertisements (Meier 2003). This trend is also well-reported in Germany during the last years. While only three percent of the advertisements included celebrities in 1993, the number has increased substantially till 2001 (12%) and is still increasing (Thuning 2004).

Although companies such as Nike or Gillette invest large amounts of money in selecting celebrities, the strategy is not risk-free. Generally, endorsers, expected to demonstrate consistently high standards of behavior, are sometimes disappointing brand managers and consumers with scandals. Negative celebrity publicity or any other scandal can have an impact on the brand he/she was associated with (Erdogan and Baker 2000). Researchers observed that negative celebrity information lower brand evaluations (Till and Shimp 1998). Moreover, Louie, Kulik, and Jacobsen (2001) investigated firm's financial performance when celebrities got bad publicity. Negative stock market reactions resulted from that negative information.

Another important observation is that celebrities often endorse several brands with different brand images. This might impact their credibility and lower consumer's believability in them. A higher purchase intention was found when a celebrity only endorsed one single product (Mowen and Brown 1981). Furthermore, Tripp et al. (1994) found that celebrities' effectiveness is only warranted, if not more than four products are promoted by them which restricts the employment of celebrities in several marketing campaigns at the same time.

A *professional* or an *expert* is any individual who has superior knowledge regarding the endorsed product category. This knowledge can be based on experience, study or training

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(Friedman and Friedman 1979). An example of such an expert is Boris Entrup, a very experienced hair and make-up artist with excellent references, who has been working for Germany's Next Topmodel since 2007. At the end of each episode a commercial shows Boris endorsing products of Maybelline Jade Cosmetics. Shown in the make-up school of Maybelline Jade Cosmetics he is putting e.g. eye-make-up on a model's face from Germany's Next Topmodel. With his hands-on make-up recommendations consumers get an idea how to use products in the best professional way.

A *typical* or the *daily consumer* is any individual who is expected to have no special knowledge of the product except the normal use of the product in his or her life (Friedman and Friedman 1979). Nowadays, the number of typical consumers in advertisements has increased because of their supposed similarity to the recipient. Consumers can easily enhance identification with that endorser. This might in turn affect their product evaluations in a favorable way. Many researchers have documented negative effects as a consequence of exposure to highly attractive endorsers compared to daily consumers on self-evaluation (i.e., appearance-related body esteem) (e.g., Stice, Spangler, and Agras 2001; Halliwell and Ditmar 2004). This might also work as a motivator to hire typical consumers instead of top models since negative feelings are considered to have an impact on advertising effectiveness (Bower 2001). The Dove campaign for Real Beauty, a worldwide marketing campaign first launched in 2004, is a demonstrative example. The campaign did not feature top models or celebrities to promote their products, quite the contrary: Dove used typical, normal women with different body shapes and sizes for their new marketing campaign. Changing attitudes about body image, beauty, and age is the focus of the company's message and supports consumers to easily identify with those Dove women. The idea behind the campaign is to inspire women to be confident with themselves and last but not least to feel good with Dove products. Olgivy, the company responsible for the campaign, reported that the sale of Dove products has increased by more than 30 percent since the campaign was launched. This success was also acknowledged by the Folm Grand Prix at Cannes Advertising Awards in 2007.

Non-human endorsers include e.g., cartoon characters, mascots and virtual models. They tend to be more cost-effective than hiring real individuals (Solomon et al. 2006). First launched in the United States in 1973, the Duracell-bunny promoted energizer batteries and, since then, using non-human endorsers has been gaining attention and popularity in campaigns now and then (Elliot 2001). The Mars' M&M character with its highly attractive package design that

consumers collect and exchange is another successful example. Virtual models or so called cyber models are becoming more and more popular these days. They appear in online advertising and on e-commerce sites in order to boost the online experience. For example, Coca-Cola Co. has set up a webpage for the Hong Kong market where cyber models communicated with the consumer. Other companies use virtual models with sender's face appearing and speaking messages aloud (Knanh and Antonio 2001).

Shortly said, the employment of endorsers of any kind can enhance communication effectiveness by:

- (1) an increase of brand recall and recognition,
- (2) positive evaluations of the advertisement and the brand,
- (3) an increase of emotional attachment to the brand,
- (4) supporting the development of credible brand personalities, and
- (5) resulting in higher sales.

These relationships will be presented and discussed in detail in the sections describing source effects (see section 3.2.4).

3.2.2 The Meaning Transfer Model

The meaning transfer model proposed by McCracken (1989) is based on theories from cultural anthropology and ethnography. Celebrity endorsement is an example of this process and plays an essential role within (McCracken 1989). Researchers suggest that the meaning transfer model is the most influential model to understand the general process through which brand beliefs are formed (Batra and Homer 2004). Through the purchase of goods and services, McCracken (1989) argues that meanings²¹ are consumed, in addition to products themselves. Thus, because of the appropriate selection of endorsers, they can evoke meanings that a company wishes a product to possess. The transfer of meaning is then performed by the consumer, who must identify the connection or the match of endorsers and product images.

Further, McCracken (1989) proposes a three stage process implying that the meaning conveyed by the characteristics of the endorser can be transferred and become a part of the

²¹ Meanings are equivalent brand image beliefs.

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product meanings. According to him, this model is applicable to a range of endorsement roles including celebrities serving as an expert or without any special knowledge. However, he excludes the typical consumer from the model.²² McCracken's assumptions will be broadened by including non-celebrities. Specifically, Study III and IV aim to examine how endorser's personality trait inferences can be transferred to brand personality impressions (see section 3.2.2 for details).

The meaning transfer process is structured in three stages as follows (McCracken 1989):

- (1) the development and formation of the endorser image,
- (2) the transfer of meaning from the endorser to the product, and
- (3) the transfer of meaning from the product to the consumer.

Overall, McCracken's (1989) model appears very theory-oriented. Although it has been widely acknowledged and cited in almost every study focusing on endorsement research but only a few studies tried to replicate it and found evidence through experiments. So far, only the studies of Langmeyer and Walker (1991) and Batra and Homer (2004) are available.

Langmeyer and Walker (1991) conducted a qualitative study with a free elicitation approach at first. Participants had to recall as many celebrity/product pairs as they could. The most frequently mentioned pairs were selected for the main study including Cher and Scandinavian Health Spas, Boomer Esiason and Hanes Underwear for Men, and Bill Cosby and Jell-O Pudding. Then, they collected responses to the question for each pair: "Think about the last time you saw Cher advertises Scandinavian health Spas. In your own words, please describe what you associate with Cher advertising Scandinavian Health Spas (what you think is being communicated when Cher advertises SHSs)" (Langmeyer and Walker 1991, p. 366). The final part included respondents who had not participated in this study before. They were asked to think about the last time they saw the products advertised and to recall associations they had with Scandinavian Health Spas, Hanes Underwear for Men, and Jell-O Pudding. According to the authors, "the purpose of this phase was to elicit responses that could be used to assess the consistency of associations between a product/celebrity endorser pair" (Langmeyer and

²² The literature review in chapter 2, discussing the nature of face perception, shows that personality trait inferences can be inferred from faces and explicitly from the combination of specific facial features. Therefore, images or characteristics of endorsers are not only formed by marketing vehicles as the advertising and fashion industries but meanings can also be inferred from endorser faces (i.e., typical consumers)

Walker 1991, p. 367). Based on the comparison with the second group of the participants they found that meanings of the celebrities were passed on to the products they endorsed.

Due to the qualitative nature of the study and the abstract nature of meanings or associations, the authors marked the problems participants had with their responses. The approach seems quite logical but the authors also suggested additional focus related to the data collection instrument. Therefore, the interpretation of responses seems somewhat difficult and quite questionable. Thus, the authors also recognize their results as a “first step” (Langmeyer and Walker 1991, p. 370).

The second study was conducted by Batra and Homer (2004) and represents the first experimental research set-up that tests the proposed transfer meaning model of McCracken (1989). They assessed the formation of brand image beliefs (i.e., fun and sophistication) when participants were exposed to advertisements for a brand featuring celebrity endorsers. These endorsers possessed different personality associations that were pre-tested. Unique to this experimental set-up was that these personality associations were not verbally mentioned in advertisements²³. The advertisement consisted of “(a) a large visual of either the smiling face of Roseanne Barr or Barbara Walters, (b) package shot of either Pepperidge Farm Milano cookies or of Frito Lay Ruffles potato chips, (c) a visual of a plate full of either the cookies or the potato chips, [...], and (d) the headline plus body copy” (Batra and Homer 2004, p. 322-323). The study consisted of two pre-tests and three studies including several experimental tasks. The first pre-test was employed in order to collect associations with the product category snack foods, and resulted in major themes with associations. During the second pre-test participants were asked to rate four brands and celebrities along different dimensions that were identified in the previous pre-test, and to rank-order that fit between them. The authors chose those brands that were rated highest on the selected image dimensions (fun and sophistication). For example, Ruffles Potato Chips were associated to be more fun than sophisticated and less sophisticated than the cookies. Further they decided on those celebrity-brand combination with the highest matching points, such as Roseanne Barr, who was perceived as being best matched with the potato chips and Barbara Walters was clearly best associated with the cookies (Batra and Homer 2004). In the first study, participants viewed the advertisement and had to answer several dependent measures such as brand beliefs including sophistication and fun, purchase intention and others. A control group was also included in order to rate the advertisement for the brand without a celebrity endorser but with

²³ This experimental procedure was adapted in the empirical studies III and VI and outlined in chapter 4.

the brand logo. In the second study, all participants had to rate the other product and not the product they had just seen. In the last study, all participants had to rate each product category, both brands and endorsers on various personality scales for fun and sophistication. They replicated this procedure by manipulating the consumption occasion by including two scenarios: purchase of product (a) for a party and (b) for a party as a host (Batra and Homer 2004). In order to determine whether the endorsers strengthened or weakened the brand image beliefs relative to their normal or natural levels, each respondent's rating values along each dimension was compared to the mean rating value of a control group in which only brand logos were shown and no celebrity endorsers. The analysis revealed that the celebrity endorser reinforced brand image beliefs only for the dimension "sophistication". That is, Barbara Walter's endorsement of cookies induced stronger brand sophisticated beliefs than Roseanne Barr's endorsement. The brand belief enhancement was independent of the consumption occasion as well. However, these finding could not be replicated for Roseanne Barr and her potato chips in increasing fun-related image beliefs (Batra and Homer 2004). Furthermore, Batra and Homer (2004) have found that the higher the product category and ad-evoked brand believes, the greater is the impact on brand preferences when social consequences are relevant (party with the respondent as the host). Overall, the results demonstrate that meanings (i.e., brand image beliefs) can be transferred from advertisement characteristics (i.e., endorser personality inferred from faces) to brands – even when endorser personalities were not explicitly communicated but inferred implicitly by consumers. The experiment of Batra and Homer (2004) clearly provides first empirical evidence for McCracken's (1989) meaning transfer model.

3.2.3 The Elaboration Likelihood Model underlying the Endorsement Process

The Elaboration Likelihood Model (ELM) has been widely used in literature to understand the basic processes underlying the effectiveness of persuasive²⁴ communications, such as advertising (Petty, Cacioppo, and Schumann 1983; Petty and Cacioppo 1986). The model basically assumes that once a consumer is exposed to any advertising cue he or she begins to process it. Petty, Cacioppo, and Schumann (1983) identified two processes by which advertising can persuade consumers: central and peripheral routes to persuasion. Depending on consumer's levels of involvement with the product (or message), one of the two routes to

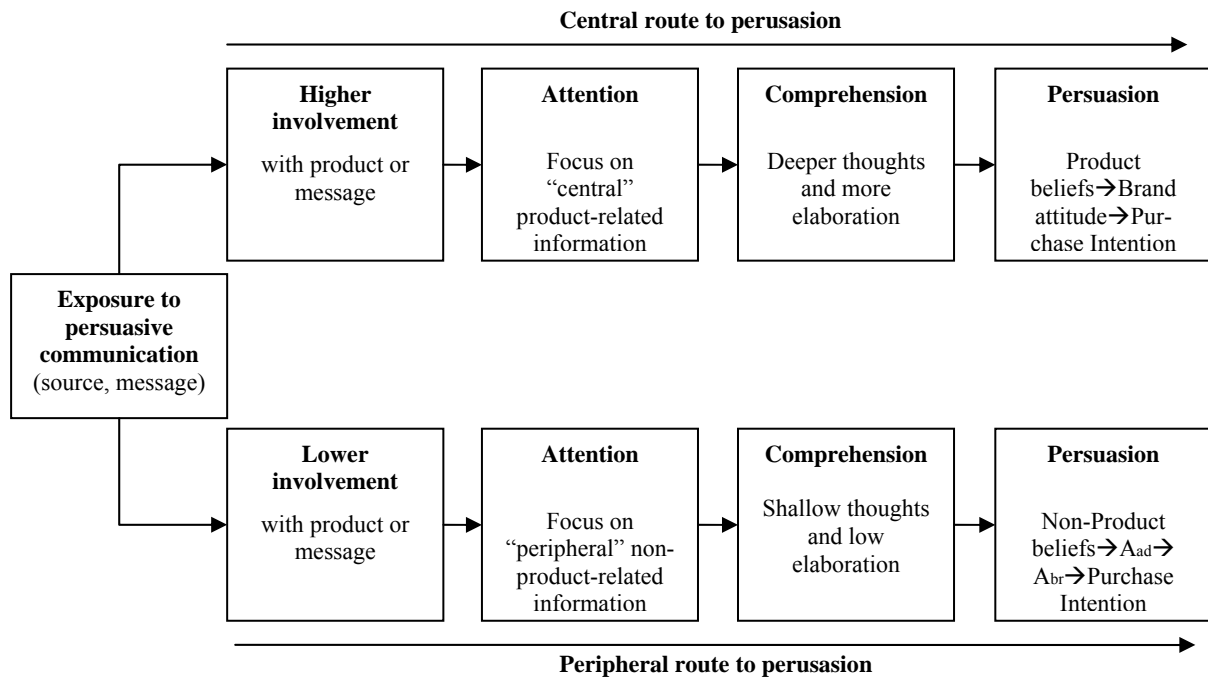
²⁴ In order to persuade consumers, a variety of communication tools is being used. In this context "persuasion refers to changes in beliefs, attitudes, and behavioral intentions caused by a promotion communication" (Peter and Olson 2008, p. 427).

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persuasion is determined. If consumers actively seek and process product-relevant information, researchers assume that these people had a high interest in this product or simply said there existed product involvement. When consumer's involvement is higher, the central route to persuasion is taken by consumers. For example, if a consumer is about to purchase a new TV (high involvement), he/she usually checks the product-relevant information presented in an advertisement. This higher motivation causes a deeper and more elaborate comprehension. If the product attributes fulfill individual's requirements and are perceived to be persuasive, favorable attitudes will follow. However, if the product attributes are weak and do not meet the individual's expectations, unfavorable attitudes will result. On the other hand, when the consumer's involvement is lower, consumers take the peripheral route to persuasion of the ELM. For example, a consumer who is not interested in purchasing a TV (low involvement) has little motivation to comprehend the central information in the ad and will not spend time nor effort to think about the product-relevant information. Instead, the consumer may focus on peripheral aspects, such as pictures in a print advertisement or the attractiveness, credibility or personality of the endorser advertising the product.

In sum, attitude changes induced via the central route result from a consumer's careful consideration of information that he or she feels central (e.g., benefits of the product). On the other hand, attitude changes induced via the peripheral route do not derive from a comparison of pros and cons of a product's attributes but from a simple cue in the persuasion context (e.g., attractiveness or likeability of the endorser) (Petty, Cacioppo, and Schumann 1983). Hence, the ELM distinguishes between two types of message information or cues in the advertisement. Central information includes specific information about product attributes or demonstration of functional consequences. Other advertisement cues providing no direct issue-relevant information are peripheral. Specifically, Petty, Cacioppo, and Schumann (1983, p. 136) cited expert sources as an example for peripheral cues that "allow a person to decide what attitudinal position to adopt without the need for engaging in any extensive thought about issue- or product-relevant arguments". Figure 5 summarizes how these two routes to persuasion work in the ELM.

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Source: Adapted from Peter and Olson 2008, p. 428

Figure 5: Two Routes to Persuasion in the Elaboration Likelihood Model

The ELM received a lot of empirical support in literature (e.g., Petty, Cacioppo, and Schumann 1983; Bitner and Obermiller 1985; Craig and Shrimp 1990; Kirmani and Shiv 1998). For example, in order to test their own model, Petty, Cacioppo, and Schumann (1983) initially conducted a study in which they manipulated involvement (high versus low), argument quality (strong versus weak), and endorser status (celebrity or typical consumer). The magazine advertisement featured a fictitious new brand, the Edge disposable razor, information of the quality, and the endorser. Results showed that under the condition of low involvement, not the arguments regarding the product quality but the celebrity status of the endorser influenced attitudes. Under the condition of high involvement, the celebrity status of the endorser did not influence product attitudes, but rather the significance of the information regarding the product quality. Based on their analysis, the authors concluded that the findings are consistent with the ELM framework, since evaluation of product quality refers to a central route to persuasion.

The results of this study paired with numerous others show that authors have assessed the effects of endorsers, mostly their physical attractiveness, as peripheral cues and found that the effectiveness of a message and an endorser clearly depends on consumer's level of involvement with the product being advertised. However, Petty et al. (1988) also noted that it is important to remember, that the same communications variable (e.g., endorser or product

quality information) can also be both a central and a peripheral cue depending on the relevance to the product. Also according to Kirmani and Shiv (1998, p. 44) “most of the empirical literature on source variables considers the source as a peripheral cue rather than as a persuasive argument.” Therefore, Kirmani and Shiv (1998) aimed to assess the role of endorser, more specifically, the perceived congruity or match between accessible endorser associations and attributes associated with the brand, as a central cue. They proposed accessible endorser associations might also work as a source of main brand information or persuasive argument when the level of issue-elaboration is high (central cue). Under the condition of low issue-elaboration, consumers are not motivated to look for information (therefore no need for source congruity) and may rely on other peripheral cues, such as endorser liking or attractiveness. Under the condition of high issue-elaboration results revealed that the perceived match between endorser and brand was more likely to have an effect on brand attitudes. Under the condition of low issue-elaboration consumers were likely to use trustworthiness as a cue for brand attitude being used as a peripheral cue. Further they found more favorable brand attitudes under the condition of source congruity and high issue-elaboration. Overall, findings demonstrate the important role of source congruity (i.e., endorser associations matching brand associations) as a persuasive argument for advertisement effectiveness (Kirmani and Shiv 1998).

3.2.4 Source Effects

How advertising messages influence consumer’s attitudes have been the focus of brand managers and advertisers for decades. Basically this relation is illustrated by the communication model which is well-acknowledged in marketing research (see figure 6). This traditional model specifies a number of components necessary for communication to be effective (Solomon et al. 2006). Generally, five elements belong to any communication process (Assael 1998; Solomon et al. 2006):

- (1) A *source*, in a broader sense for example, a marketing organization or the advertisers, in a narrow sense for example, any type of *endorser*, develops communication objectives for its advertising and promotional campaigns and identifies a target group for communicating messages (e.g., benefits of products). Then, the source has to choose the *message* to be communicated by putting the meaning into it.
- (2) The process of *encoding a message* requires a translation of these earlier goals set into a message. More precisely, the transfer of meaning must be initiated by creating messages with

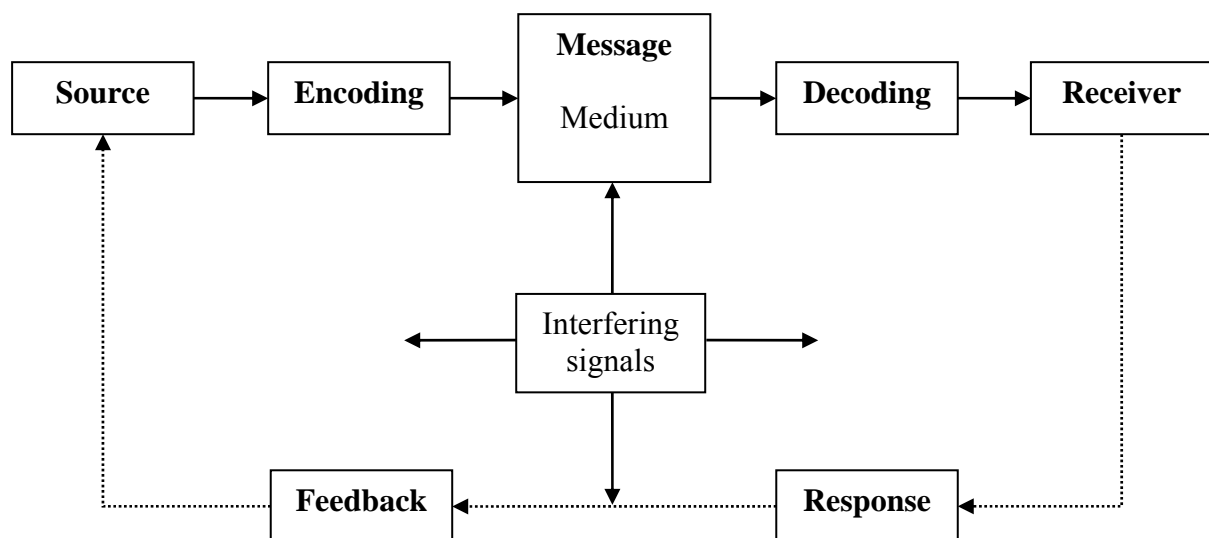
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appropriate symbolic images. Using visual cues such as specific colors or typefaces can additionally infer meanings. Then, this message is represented in e.g., print/TV-advertisements or included in sales presentations in a B-to-B context.

(3) The encoded message (e.g., brand personality) must then be *transmitted* through an appropriate medium. Transmission of the message can be achieved by involving mass media (television, radio, magazines or websites), word-of-mouth communications from salespeople, personal contacts or direct-mail literatures sent to target consumers.

(4) One or more receivers, i.e., consumers from the target group, *decode* the message by interpreting and understanding the meaning behind it and probably retain the message in their memory.

(5) Finally, *feedback* on the effectiveness of communication process can be received by the source. There are several ways in order to measure feedback, i.e., consumer responses: sales, surveys or psychophysiological measurement methods²⁵ can give insights in their reactions to messages of advertisements. Incorporating feedback information the source can then adjust the message according to their target consumers' needs.



Source: Adapted from Solomon et al. 2006, p. 168

Figure 6: The Communications Model²⁶

²⁵ Psychophysiological measurement methods are briefly introduced in section 4.4.2.

²⁶ Communication can be disturbed by interfering signals. Generally, these are caused by the receiver's personality, environment or competitors.

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It is widely acknowledged that the source of information can affect the interpretation of the message and in turn the likelihood of the message acceptance. Therefore, the choice of a source is very important and dependent on several dimensions in order to maximize attitude change. Researchers suggest that the persuasiveness of an endorser in an advertisement depends on the nature of the source. Two important source characteristics have been identified: credibility and attractiveness²⁷. Issues of source credibility and attractiveness were first investigated in social psychology and trace back more than 50 years in the past to the works of Hovland, Lumsdaine, and Sheffield (1949). In one of the early studies, Hovland and Weiss (1951) investigated the change in opinions (acceptance versus rejection) when messages with different endorsers were presented. Communicators or endorsers characterized as trustworthy versus untrustworthy were selected as sources. Results showed significant changes in opinions related to trustworthiness of the source employed in the advertisement.

However, there are factors limiting the influence of the source other than endorser characteristics. Research in consumer psychology focused on the concept of product involvement as an important moderator of the amount of information processed (Petty, Cacioppo, and Schumann 1983) that was already discussed in the previous section 3.2.3. In summary, Petty, Cacioppo, and Schumann (1983) proposed two routes to persuasion. When consumers view an advertisement with a product of low involvement, the celebrity was a very effective determinant of attitude formation about the product. On the contrary, when the advertisement presented with a product of high involvement, the celebrity had no effect on attitude formation; instead information about the product was the determinant factor of consumer's product evaluations.

Researchers identified other characteristics being suggested to play an influential role on how consumers are affected by endorsers. For example, the findings of Martin, Wentzel, and Tomczak (2008) suggest that the level of a consumer's susceptibility to normative influence affects the degree to which endorsers represent an effective advertising strategy. Susceptibility to normative influence is defined as "the need to identify with or enhance one's image in the opinion of significant others through the acquisition and use of products and brands, the willingness to conform to the expectations of others regarding purchase decisions, and/or the tendency to learn about products and services by observing others or seeking information

²⁷ Source similarity is also mentioned as an influential variable. Some researchers assign the variable to source attractiveness (e.g., Kang and Herr 2006; Solomon et al. 2006). However, other researchers don't assign and manipulate consumer's similarity to the endorser and assess its impact on consumer's response (see section 3.2.4.3 for an overview).

from others” (Bearden, Netemeyer, and Teel 1989, p. 473). Results indicate that consumers scoring high on susceptibility to normative influence placed a greater emphasis on the endorser than on product attribute information. In contrast, consumers scoring low on susceptibility to normative influence consumers are more affected by product attribute information.

In the context of source dominated marketing communications the following sections provide an extensive evaluation of the influence of source effects and assess their findings in order to highlight source models’ persuasiveness and the multidimensional nature of source cues. Sources may vary in credibility, attractiveness, and similarity, however, the main focus is on two characteristics, attractiveness and similarity, since they are part of the Study III and IV.

3.2.4.1 The Source Credibility

The source credibility model represents the beginning of marketing research related to product endorsement and traces back to the early works of Hovland and his colleagues in the 1950s. Source credibility refers to the level of expertise and trustworthiness consumers attribute to the source of a message. Therefore, credibility consists of two specific components: expertise and trustworthiness. According to researchers, both concepts must be clearly distinguished from each other (Hovland, Lumsdaine, and Sheffield 1949; Hovland, Janis, and Kelley 1953).

Expertise is defined as the ability of the source (i.e., endorser) to make valid statements about the product. Experts possess the knowledge necessary to provide accurate information about the product and its characteristics. Trustworthiness is defined as the willingness of the source to make valid statements about the product (Hovland and Weiss 1951; McCracken 1989). Trustworthy endorsers intent to transmit accurate information and are believed to be honest. McCracken (1989) suggests that some endorsers may be experts and considered as competent, but this does not imply that consumers associate trustworthiness with them. However, McGinnies and Ward (1980) demonstrated that a trustworthy endorser was more convincing than an untrustworthy one regardless of his expertise level. In contrast, other studies showed that trustworthiness may be less important than expertise (e.g., Hovland and Weiss 1951; Kelman and Hovland 1953).

Advertisers can build credibility through a variety of appropriate marketing communication programs including sponsoring, event management, direct marketing, online marketing or print/TV-advertisements. A common strategy in marketing is to use a credible endorser

presenting the information about the product. On the basis of past research including social psychology, consumer behavior, and related disciplines with regard to credibility effects on persuasion, most studies have identified the important role of source credibility (i.e., endorser and corporate credibility) for consumer response (e.g., Manfredi and Bright 1991; Walker, Langmeyer, and Langmeyer 1992; Grewal, Gotlieb, and Marmorstein 1994; Albright and Levy 1995; Goldsmith, Lafferty and Newell 2000; Mugny et al. 2000; Guido and Peluso 2006). All these studies demonstrate that a higher credible source results in more favorable evaluations including attitudes and behavioral outcomes compared to a lower credible source. A detailed literature review on source credibility is not be discussed in this section²⁸, since the focus of the empirical studies is set on similarity and attractiveness both of which are presented in the next two sections.

3.2.4.2 The Source Attractiveness

It is well known that consumers initially and automatically make an evaluation of the stimulus when they are exposed to an advertisement or any other marketing stimuli (Lazarus 1982). When the stimulus is a person, particularly when the person's face is shown, one meaningful appraisal dimension is the physical attractiveness of the person (Hirschberg, Jones and Haggerty 1978). Furthermore, Gulas and McKeage (2000) argue that there is an almost automatic tendency to categorize a person as attractive or unattractive. Some authors suggest that this appraisal dimension has mating-selection intentions and serves as the heritage of millions of years of evolution (Saad 2004). On the other hand it is also possible to claim that the objective of this categorization is to assist in information processing by providing a shortcut to a range of inferences (other than related to mating) about the person (Hirschberg, Jones, and Haggerty 1978).

Research in social psychology has consistently found that the physical attractiveness of an individual influences the perception of that person. Advertising practitioners believe the use of an attractive endorser is the most effective strategy. Their behavior is consistent with the meta-analytic review of Eagly et al. (1991) who highlighted the important role of the physical attractiveness stereotype. Generally speaking, with the use of attractive models, advertisers aim to enhance consumer's motivations to identify with attractive models and imitate them by purchasing and using the product. Thus, consumers aspire to become more like the admired

²⁸ Beyond that, an extensive and critical review of five decades' evidence on the persuasiveness of source credibility can be found in the work of Pornpitakpan (2004).

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models (e.g., Kelman 1961; Bandura 1969). Commonly, there is a tendency to attribute more positive personality traits to people who are physically attractive than unattractive, also known as the attractiveness-halo-effect (see section 2.2.3 for a review). Based on the halo-effect, it is natural that advertisers try to connect their products with attractive individuals.

In principle, source attractiveness refers to the source's perceived social value which might emerge from the person's physical appearance, personality, social status, or his or her similarity to the receiver (Kang and Herr 2006; Solomon et al. 2006). More precisely, Morrow (1990, p. 47) defines physical attractiveness as the "degree to which one's facial image elicits favorable reactions from others." Evaluating photographs of a person's face is considered to be a common and reliable form of measuring and rating physical attractiveness (Putzer 1985; Morrow 1990).

There is substantial research examining physical attractiveness of faces in the context of advertisement effectiveness. One of the first significant works in advertising research was conducted by Baker and Churchill (1977). They assessed the physical attractiveness of models in print advertisements of coffee and cologne, and how consumer evaluations of advertisements and products are affected. Their results show attractiveness does influence consumer evaluations of the advertisement's aesthetic qualities (i.e., ratings whether the advertisement is appealing, impressive, attractive, and eye-catching). Further, they found attractiveness seems to evoke consumers' attention and liking of the advertisement. However, these two variables did not affect consumers' cognitions (i.e., ratings whether the advertisement is believable, informative, and clear) suggesting physical attractiveness might be relatively ineffective in getting the message accepted by target consumers. These findings were confirmed by Petroschius and Crocker (1989) and extended by the fact that physically attractive models had an impact on the willingness to purchase the advertised product but did not have an impact on individuals' perception of product quality. However, results of the well-acknowledged and popular study of Kahle and Homer (1985) revealed higher likeability, purchase intention and recall of the brand after the exposure to an attractive rather than an unattractive endorser. Another significant work was conducted by Till and Busler (2000) who investigated how a physically attractive endorser affects the respondent's attitude toward the endorsed brand dependent on the product type. When attractive pictures were shown, brand attitude and purchase intention were significantly higher, irrespective of the product type (pen and cologne).

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Another study distinguished between levels of physical attractiveness (low-medium-high) of salespeople in direct mail advertisements investigating their effects on consumer's purchase intention (Caballero and Pride 1984a). The best advertisement response was given under the condition of a highly attractive female endorsing the product that resulted in higher consumer purchase intentions. Similarly, Liu, Huang, and Minghua (2007) developed scenarios with information about male sport endorsers (low-medium-high attractive; only text - no pictures in this study) promoting sport shoes and sport drinks. They found high attractiveness influenced most positively consumer's purchase intentions. However, the effect of attractiveness on consumer's purchase intentions was higher when the product-endorser match-up was lower than the effect caused by high-matched product-endorser combinations with an endorser of low-level attractiveness – a finding that might be explained by cultural differences in endorser importance in China.

Further, another research differentiated between problem-solving products (acne concealer and medicine) and beauty enhancing products (lipstick and earrings) (Bower and Landreth 2001). Different to other studies, the authors introduced only two levels of attractiveness – normally attractive and highly attractive endorsers. In line with the match-up hypothesis (see section 3.2.5 for the match-up hypothesis) highly attractive endorsers were best associated with beauty enhancing products, and resulted in better product evaluations, because they were perceived as having greater expertise than normal endorsers. However, no effect was found for normally attractive endorsers. Surprisingly, there was no advantage in combining problem-solving products with highly attractive endorsers instead of normally attractive endorsers. Another unexpected result was that highly attractive models did not generate higher trustworthiness, which indicates that attractiveness may not be linked to beliefs about a model's willingness to give valid information. These findings further suggest that advertisers must pay attention to the type of attractiveness-relevant product in figuring out ideal match-ups with highly attractive models.

Similarly, Kamins (1990) investigated the role of attractiveness-irrelevant (e.g. home computer) and relevant (luxury car) products and their interaction with attractive and less attractive endorsers. In his work, attractiveness was used as the match-up factor like in most other studies. Results for luxury cars revealed that an attractive endorser led to higher credibility and more positive attitudes toward the advertisement compared to a less attractive endorser. These findings could not be replicated for attractiveness-irrelevant products questioning the claim that an attractive endorser is always better.

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As mentioned, some results of the presented studies show the assumed advertising effectiveness of attractive endorser can not always be supported. For example, Caballero, Lumkin and Madden (1989) further found that the level of attractiveness (low-medium-high) did not influence the purchase intention of grocery shopping goods such as a soft drink and cheese presented in an advertisement. Another study even showed a less attractive model for in-store displays for beer and facial tissues actually increased sales for facial tissues (Caballero and Solomon 1984b). Similarly, Ohanian's (1990) study revealed that the physical attractiveness of an endorser could not be related to the intent to purchase, but expertise could. Since expertise was the most significant factor in his research, Ohanian (1990) suggested for effective spokespeople being knowledgeable, experienced, and qualified to endorse a product.

Another stream of research has documented negative effects on self-evaluation (i.e. appearance-related body esteem) as a consequence of exposure to highly attractive endorsers (e.g., Stice, Spangler, and Agras 2001; Halliwell and Ditmar 2004). It is already accepted in research that women usually compare themselves spontaneously and automatically with models in advertisements (e.g., Richins 2001; Smeesters and Mandel 2006). Additionally, studies show self-comparison with highly attractive endorsers result in greater negative emotions, especially on consumer's self-esteem (e.g., Martin and Gentry 1997; Bower 2001). If individuals experience negative affects strong enough, they decrease their perceived expertise level of the endorser and lower evaluations of the product as well (Bower 2001). Particularly, participants who compared themselves with highly attractive endorsers felt frustrated (Bower 2001). Praxmarer (2006) replicated the study without explicitly making participants aware of the model's beauty. Positive effects of the model's attractiveness (facial beauty) occurred for the attractiveness-related (lipstick) and -unrelated product (vacuum cleaner) suggesting that beauty works best even if an attractiveness-unrelated product is advertised. Therefore, these results challenge the match-up hypothesis when attractiveness is used as the match-up factor.

Extending these studies, Pillai, Whang, and Harris (2006) propose positive or negative attitudes toward the advertisement are not entirely based on the absolute level of endorsers' attractiveness but also determined through the gap between the perceived self-attractiveness and attractiveness of the endorser. The results suggest that higher levels of gap motivate consumers to process advertisement claims more closely and identifies effects of the gap on the credibility of the advertisement – less credible advertisement with a greater magnitude of the gap. They also found attitudes toward the brand were negatively affected by the gap level.

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Another interesting study recently conducted by Micu, Coulter, and Price (2009) investigated the immediate post-ad exposure effects of an attractive model on product evaluations and self-judgments. Unique to their study was the assessment of product trial's effects on consumer evaluations. Interestingly, they found consumers responded equally favorable to advertisements in both model conditions (attractive and average-looking). Specifically, consumers exposed to the attractive model gave worse product evaluations after a two weeks product trial, whereas consumers exposed to the average-model gave better product evaluations after the trial.

Overall, the literature review highlights the relevance of physical attractiveness and puts forward its influential role on consumer perception of advertisements and eventually on purchase intention. Most studies result in positive effects of endorsers' attractiveness on consumer attitudes toward the advertisement or product and in some cases on purchase intention, even though attractive-irrelevant products were endorsed. However, other studies suggest attractiveness might cause negative effects as well, and results show that the support for the attractiveness-halo-effect is somewhat mixed. Therefore, researchers are questioning the effectiveness of highly attractive endorsers in media, and the findings of these studies clearly demonstrate that the claim "what is beautiful is good" appears not to be applicable for all advertisement contexts. It is rather a simplistic view and suggests other factors play an essential role as well such as the level of attractiveness, self-comparison, product type, product involvement, and product trial. Most studies focused primarily on consumer responses including brand recall, attitude toward the ad, brand, and endorser, and purchase intention. However, they did not assess responses to specific brand characteristics. More precisely, despite the relevance of the brand personality concept (see section 3.1.3), the influence of attractiveness on brand personalities has been neglected so far. For example, endorser attractiveness could be important for exciting brands whereas unimportant for competent brands. To shed more light on the mixed results of endorser attractiveness, brands with different brand personalities have been selected in Study III and IV. Table 5 summarizes previously presented studies among others²⁹, identifies and categorizes different response variables that are affected by endorser attractiveness.³⁰

²⁹ with an advertising focus (primarily with non-celebrities selected as endorsers)

³⁰ Not all existing studies are listed here. Different dependent variables were categorized and studies that fit the most were included.

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Table 5: Summary: Methods and Findings of Advertising Effects of Source Attractiveness

Study	Celebrity		Product	Attitude toward ad/ endorser	Ad recognition, Brand recall	Attitude toward the product (e.g., product quality)	Purchase Intention	Other	Findings
	Celebrity	Non-Celebrity							
Micu, Coulter, and Price (2009)		X	Cosmetics (lipstick)	X		X	X	X	Consumers responded equally favorably to ads (i.e., attitude toward ad, product quality and purchase intention) with attractive models vs. no models after a two weeks ad-exposure (i.e., product trial).
Liu, Huang, and Minghua (2007)		X	Sport shoes; Sport drinks				X	X	The effect of attractiveness on consumer's purchase intention is higher when the product-endorser match-up is lower than the effect caused by high-matched product-endorser combinations with an endorser of low-level attractiveness.
Pillai, Whang, and Harris (2006)		X	Advertisement for a bank	X				X	The greater the gap between perceived attractiveness of self and that of the model, the greater the number of thoughts of the ad claims. The attitude toward the brand was negatively affected by the size of the gap for males and females.
Praxmarer (2006)	X		Lipstick; Vacuum cleaner	X		X			Positive effects of the model's attractiveness occurred for the attractiveness-related and -unrelated product.
Bower and Landreth (2001)		X	Problem-solving products (acne concealer, medicine) & beauty enhancing products (lipstick, earrings)	X		X			Highly attractive endorsers were best associated with beauty enhancing products and resulted in better product evaluations, because these endorsers were perceived as having greater expertise than normal endorsers.

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Study	Celebrity		Product	Attitude toward ad/ endorser	Ad recognition, Brand recall	Attitude toward the product (e.g., product quality)	Purchase Intention	Other	Findings
	Celebrity	Non-Celebrity							
Bower (2001)		X	Treadmill (print advertisement)			X	X	X	A higher negative affect (in comparison with highly attractive endorser) results in a decrease of perceived expertise level of the endorser and lowers evaluations of the product.
Till and Busler (2000)		X ³¹	Pen and men's fragrances/cologne; Candy and energy bars (print)			X	X		An attractive endorser has a positive effect on brand attitudes, brand beliefs (only for cologne: "smells good") and purchase intention unrelated to product type.
DeShields (1996)		X	Broadcast commercials	X		X			Attractiveness of salesperson impacts persuasiveness of the communication medium.
Shavitt et al. (1994)		X	Nine filler advertisements and the target advertisement: fictitious restaurant	X	X		X		When sensory attributes (e.g., taste/aroma of foods) were given, endorser attractiveness influenced subjects' evaluations of the restaurant under the low-involvement condition but not under the high-involvement condition. The reverse was true when image attributes (e.g., wearing a Rolex watch) were given. Same findings were obtained across attitude, purchase intention and favorability measures.
Ohanian (1990)	X		Perfume; Designer jeans; Tennis racket; Cologne	X			X		The type of celebrity can affect consumer's attitudes toward the ad, the product & purchase intentions for the product. Expertise (and not physical attractiveness) was the most significant factor explaining purchase intention.

³¹ A fictitious endorser was created with background information and a name (considered as a celebrity).

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Study	Celebrity		Product	Attitude toward ad/ endorser	Ad recognition, Brand recall	Attitude toward the product (e.g., product quality)	Purchase Intention	Other	Findings
	Celebrity	Non-Celebrity							
Kamins (1990)		X	Attractiveness -irrelevant (PC) & -relevant (luxury car) products	X					An attractive endorser led to higher credibility and more positive attitudes toward the advertisement, relative to a less attractive endorser (only for luxury car).
Petroshius and Crocker (1989)		X	Soap; Pens (print)	X		X	X		Ads with the more physically attractive spokesperson resulted in a more positive attitude toward the ad and greater willingness to purchase that product. No impact on individual's perception of product quality was found.
Caballero, Lumkin and Madden (1989)		X	Soft drink ; cheese				X		The level of attractiveness (low-medium-high) did not influence the purchase intention of grocery shopping goods.
DeBono, Kenneth and Richard Harnish (1988)	X ³²		Calendar put out by Michigan State University's female pom-pom squad	X	X	X			High self-monitoring individuals agreed with the expert source regardless of the quality of the presented arguments but agreed with the attractive source only when he delivered strong arguments. By contrast, low self-monitoring individuals agreed with the attractive source regardless of the quality of the presented arguments, but agreed with the expert source only when he delivered strong arguments.
Loken and Howard-Pitney (1988)			Cigarettes (print)		X	X			Higher ratings on persuasiveness, credibility and recall when an attractive endorser is shown.

³² Message was sent by Dr. Leonard Charles, a nationally known, well-published research psychologist.

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Study	Celebrity	Non-Celebrity	Product	Attitude toward ad/endorser	Ad recognition, Brand recall	Attitude toward the product (e.g., product quality)	Purchase Intention	Other	Findings
Kahle and Homer (1985)	X		Edge razor (print, 11 real and one fictitious)	X			X		The more likeable and attractive the celebrity, the more favorable attitudes consumers had toward the ad and the product. Consumers had a higher purchase intention for that product.
Caballero and Pride (1984a)		X	Direct mail advertisements				X		Higher purchase intention under the condition of a highly attractive female endorsing the product.
Caballero and Solomon (1984b)		X	Beer; Facial tissues (Point-of-Purchase Display)						A less attractive model for in-store displays increased sales (only for facial tissue). Male models tended to result in higher beer sales among both, sexes, than female models.
Reid and Soley (1981)			Cigarette; Liquor; Automobile (real ads from magazines)		X				Attractive models do not have equivalent effects on recognition of all components of the ad (no difference on verbal recognition). Recognition is better when a model is present vs. no model and is affected by product category (highest rating: automobile, then liquor, then cigarette).
Friedman and Friedman (1979)	X	X	Costume jewelry; vacuum cleaner; cookies	X	X		X	X	Effectiveness of endorser is dependent on particular endorser type-product type combinations. Brand name recall was highest for celebrities used as endorser.
Baker and Churchill (1977)		X	Ads for Coffee, Perfume, Cologne or Aftershave (Print)	X			X		The more attractive the model, the higher is the affective and cognitive rating of the advertisement. For male model in the ad, female subjects expressed a greater intention to purchase the product than male subjects did.

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Study	Celebrity		Product	Attitude toward ad/ endorser	Ad recognition, Brand recall	Attitude toward the product (e.g., product quality)	Purchase Intention	Other	Findings
	Celebrity	Non-Celebrity							
Chestnut, LaChance, and Lubitz (1977)		X	Ads from national magazines (projected on screen)		X				Recognition of the brand name information was higher with an attractive model (vs. no model).
Smith and Engel (1973)		X	Automobile ad (print)	X				X	The car was perceived to be more appealing, lively, youthful and better designed with the physically attractive model (vs. no model): Subjects also perceived the car to be higher priced, faster, less safe and higher in horsepower.
Steadman (1969)		X	Print ads with brand names		X				Immediate recall was not affected. More delayed brand recalls occurred when subjects had favorable attitudes toward sexually suggestive advertising.

Source: author's own selection

3.2.4.3 The Source Similarity

In addition to source credibility and attractiveness, the similarity between consumers and endorsers is also suggested to be useful to study how consumer responses are affected by endorsers. Thus, it has also been an important source dimension in consumer research and marketing practise.

Reviewing evolutionary theories suggest positive assortment is the most common pattern found among many animals (Burley 1983). In particular, assortative mating is often mentioned in this context, i.e., a mating pattern when similar phenotypes mate at levels above chance (Partridge 1983).³³ Studying partnerships, researchers have shown that females for example, chose husbands whose eye colors resembled their fathers' (Wilson and Barrett 1987). Another study found humans with similar traits remained longer in a relationship than dissimilar ones (Hill, Rubin, and Peplau 1976). In an extensive review of evolutionary works, Penton-Voak, Perrett, and Peirce (1999) suggest it is reasonable to conclude some physical similarities occur in human marriage. However, most studies have reported facial similarity between couples, married a long time, suggesting couples become more alike over time due to shared emotional and environmental experiences (Griffiths and Kunz 1973; Zajonc et al. 1987).

Generally, similarity between two individuals can be assessed in several ways. Researchers have examined similarity based on a variety of different measures or attributes in their studies. For example, individuals can be similar in their physical appearance, age, gender, education, social class, behavior, attitudes, product level type or a task-relevant dimension (e.g., product usage or preferences), lifestyle and values. The following literature review presents studies differentiated through their similarity measurements. This limits the comparability of their findings, but also highlights the possibilities and facets of source similarity.

In early works, there was already evidence that similarity produces liking for the similar person, and this in turn can increase the effectiveness of communicators' influence attempts (e.g., Byrne 1961; Byrne and Wong 1962; Brewer 1979). For example, Brewer (1979) has argued in her research that individuals tend to compare and categorize others as well as themselves based on factors such as race, age and lifestyle. Moreover, she found in-group

³³ It is shown that assortative mating increases homozygosity that is observed in many non-human species (Partridge 1983). However, genetic similarity in human partnerships or incestuous mating results in high infant mortality, developmental disorders and physical defects such as heart abnormalities, deafness and dwarfism (Seemanova 1971).

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members (i.e., high perception of similarity) tend to judge other in-group members more favorable than out-group members (i.e., high perception of dissimilarity).

The study of Berscheid (1966) assessed the role of similarity and attractiveness of communicators. Similarity levels were described as having similar or dissimilar values to the subjects in two areas, international affairs and education. Results confirmed when communicator attractiveness was controlled, communicator-communicatee similarities effected considerably more opinion change than similarities did which were irrelevant for the communication. In Brock (1965) study, consumers were even willing to pay a higher price for a painted picture from a salesperson with similar paint usage patterns rather than from one with a dissimilar level of paint consumption usage needs.

It is further suggested that similarity in physical appearance between the judge and judged (i.e., consumer and endorser) may lead to differences in judgments of attractiveness. An experiment of Penton-Voak, Perrett, and Peirce (1999) found support for assortative preferences, i.e., for the positive relationship between facial similarity and attractiveness judgments. Facial similarity was manipulated by using computer graphic techniques that generated facial stimuli from subject's photographs. In particular, subjects rated faces similar to them-selves attractive and faces very different from themselves unattractive.

In a different study, levels of perceived similarity were defined through the salesperson's prior purchase behavior of musical tapes that the customer was about to purchase (Woodside and Davenport 1974). This definition of similarity indicated the salesperson's preference of a similar type of music. Their results indicated that the greater the perceived similarity attached to the salesperson, the greater is the likelihood of purchase. However, one limitation was given through the expertise of the salesperson: the perceived expertise of the salesperson produced a greater proportion of purchases than the perceived similarity of the salesperson.

Several researchers have focused a considerable amount of their attention on investigating the effectiveness of similar sources on persuasion when the source's cultural background was a characteristic to infer similarity or dissimilarity. In 1991, Whittler and DiMeo examined viewers' responses to racial cues in advertising and their influences on message evaluation. Similarity to the actor was assessed in terms of overall lifestyle, cultural back-ground, dress and appearance as well as basic values. Regardless of their attitudes toward blacks, whites had less favorable attitudes toward the products and the advertisements as well as a lower

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purchase intention when advertisements featured black rather than white actors. A very recent work from Morimoto and La Ferle (2008) found a positive effect of model-consumer racial congruency on perceived model credibility. Specifically, Asian American participants perceived Asian models more credible than Caucasian models and also preferred advertisements with Asian models more than Caucasian models. Similarly, the results of Brumbaugh (2002) suggest advertisements are effective not only because they let viewers feel connected with pictured sources, but also because these advertisements have cues that activate shared knowledge stored in cultural models. In her work, she also argues activating these cultural models, which are connected to the viewer's self, lead to self-referential processing. This in turn, generates favorable attitudes. Cultural cues such as racial similarity or ethnic identification are gaining a lot of attention in research and are often used as a similarity measure (e.g., Forehand and Deshpandé 2001; Martin, Lee, and Yang 2004). Generally, the growing expenses for advertisement and the growing markets of consumers with a multicultural background in the United States have particularly intensified the research of cultural influences on behavior. Especially, content analyses were conducted by several researchers showing advertising portrayals of Asian Americans in print advertisements represent commonly held stereotypes. Further, these models were overrepresented, whereas Hispanic Americans were significantly underrepresented in magazine advertising. Portrayals of African Americans have become less stereotyped over the years, and minority group models were frequently featured in a favorable manner, relative to White models (Taylor and Lee 1994; Taylor, Lee, and Stern 1995; Taylor and Stern 1997; Peterson 2007).

Price, Feick, and Higie's (1989) measure of similarity was manipulated in a quite different way. They composed scenarios describing the lives of two individuals,³⁴ and found that similar others have a greater informational influence on consumer's service provider choices. In a quite similar approach, Feick and Higie (1992) presented information on socio-demographic characteristics in order to create similarity or dissimilarity with the consumer. Results showed for choices of service providers (e.g., hair salon, interior decorator), whose outcomes are likely to be interpreted differently by different consumers, an endorser with similar characteristics is preferred – even if the endorser was less service-experienced.

³⁴ Example: "Like John, Pete is in his late twenties and is married with two children. Pete has lived in this community a few years, and recently joined a local corporation as an entry level manager. Both Pete's background and lifestyle are quite similar to John's. John has found from their talks together that they often have similar tastes and preferences. Consequently, their conversations are always quite interesting." (Price, Feick, and Higie 1989, p. 233)

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Particularly, a similar viewed endorser caused more favorable attitudes toward the advertisement and resulted in higher purchase intentions than a dissimilar endorser did.

After reviewing and combining studies of other disciplines, such as face recognition and design perception, there are recent research attempts which are exploring attitudes toward morphed photographs. Morphs are merged photographs of two or more faces into one face. The morphed face evenly resembles both faces from which it was composed (Ruys et al. 2006). Computerized facial-image processing systems are developed to delineate corresponding points located at several facial landmarks such as the face outline, corner of the eyes and the mouth. They generate a new face based on a weighted average of the landmark with specific characteristics of the selected faces (e.g., Kamachi et al. 1998; Faber, Duff, and Lutchyn 2008). This new technology increases the relatedness between two individuals and further makes it possible to generate similarity between consumers and endorsers presented in print advertisements.

A recent study on face morphing shows the amount of relatedness increases judgments of trustworthiness (DeBruine 2002). However, no effect on attractiveness was found conflicting with research on romantic partnerships which shows individuals have a preference for partners with at least some aspects of similarity to self or family evaluated attractive (e.g., Perrett et al. 2002; Little et al. 2003). The study of Faber, Duff, and Lutchyn (2008) assessed whether self-morphing in advertisement might work by transferring self-related traits to the brand being advertised. Their findings suggest self-morphed images may facilitate the transfer of self-perceived traits to a brand. Thus, similarity might motivate consumers to assimilate a brand's personality with their own. Further research in face morphing should be able to provide more insights into the processment of advertising messages.

At the general level, Ruys et al. (2006) suggest some degree of similarity is necessary to initiate the comparison process with other individuals. Dissimilarity is argued to decrease the likelihood of comparison and similarity to enhance comparison processes. Basically, social comparison can be used as a basis for self-evaluations in both directions, i.e., self-evaluations are sometimes assimilated toward and sometimes contrasted away from a given standard – depending on psychological closeness or comparison mechanisms (e.g., Brown et al. 1992; Mussweiler, Rueter, and Epstude 2004; Trampe, Stapel, and Siero 2007). Studies reveal negative effects can occur due to social comparisons or feelings of inadequacy (Bower 2001; Pillai, Whang, and Harris 2006). Specifically, brief exposure to endorsers in print media induced greater weight

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concern or negative mood (e.g., Pinhas et al. 1999; Posavac, Posavac, and Weigel 2001)³⁵. Self-evaluations might then in turn influence subsequent brand evaluations. For example, Bower (2001) found with sufficient negative affect, evaluations of both, the endorser and the product, are affected adversely.

In sum, most studies identified positive effects on advertisement evaluations when endorsers, similar to consumers, are selected to present information about the product. Similarity was achieved in many ways by manipulating values, lifestyle, cultural background, physical appearance and socio-demographics.

However, from a practical perspective of advertising, demographical similarity and cultural background drawn as similarity dimensions received the most attention, simply, because it is easier to communicate. For example, in an international campaign of Benetton, advertisements include endorsers with diverse cultural backgrounds to cover all selected (inter)national consumer segments. Table 6 summarizes previously presented studies among others including selected similarity measures and responses to source similarity³⁶.

³⁵ Based on sociocultural theory, there is an overwhelming large pool of studies assessing body image disturbances, body dissatisfactions and other eating disorders as a consequence from idealized images in the media (see Tiggemann and McGill 2004 for an overview).

³⁶ Not all existing studies are listed here. Different similarity measures were categorized and the studies that fit the most were included.

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Table 6: Summary: Methods and Findings of Advertising Effects of Source Similarity

Study	Celebrity		Product	Similarity – values, lifestyle	Similarity – cultural background/ethnic identification	Similarity – physical appearance	Similarity – socio-demographics	Other	Findings
	Celebrity	Non-Celebrity							
Morimoto and La Ferle (2008)		X	Skin foundation; Iron	X	X				Model-consumer congruency enhances source credibility and leads to preference for ads with the same cultural background.
Pillai, Whang, and Harris (2006)		X	Advertisement for a bank			X			Higher levels of gap between self-attractiveness and the attractiveness of the endorser motivate consumers to process the advertisement claims more closely. With a greater magnitude of the gap consumers perceive advertisements to be less credible. The attitude toward the brand was negatively affected by the level of the gap.
Faber, Duff, and Lutchyn (2008) ³⁷	-	-	A fictitious brand of face wash						Correlations were found between self-perceived traits and brand traits in the self-morphed condition. Results suggest that self-morphed images may facilitate the transfer of self-perceived traits to a brand.
Silvera and Austad (2004)	X		Diamond-set watch Constellation Carré (Omega); Goodlife cologne (Davidoff)			X			Perceived similarity with the endorser was associated with positive attitudes toward the endorser (interesting, likeable, pleasant, good), but did not extend to attitudes toward the product (desirable, pleasant, likeable, good).
Martin, Lee, and Yang (2004)		X	Green tea (stereotypical product); Shampoo (non-stereotypical product)		X				Asian models advertising a typical product result in more self-referencing and more positive attitudes toward the model, ad and purchase intentions from both, Asians and whites.

³⁷ A self-morphed image was presented in the advertisement.

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Study	Celebrity	Non-Celebrity	Product	Similarity – values, lifestyle	Similarity – cultural background/ethnic identification	Similarity – physical appearance	Similarity – socio-demographics	Other	Findings
Brumbaugh (2002)		X	Two fictitious brands of an instant developing film and an unsecured personal loan		X				White source cues shown in ads activated the dominant cultural model stronger than black source cues for black participants. The incongruity of cues resulted in less favorable ad reactions than other congruent (all dominant culture cues or all subculture cues) or mildly incongruent (subculture source and dominant culture non-source cues) cue combinations.
Forehand and Deshpandé (2001)		X	Nokia cellular telephones and Northwest Airlines		X			X	More favorable responses are expected when participants are exposed to same-ethnicity endorser in print advertisements (Asian or Caucasian).
Bower (2001)		X	Treadmill (print advertisement)			X			A higher negative affect (consumers comparing with highly attractive endorser) results in a decrease of perceived expertise level of the endorser and lowered evaluations of the product.
Pinhas et al. (1999)		X	Fashion print advertisements			X			Ratings indicate that women were more depressed and angrier after viewing pictures in fashion magazines of models represented by thin ideals.
Feick and Higie (1992)		X	Service provider for night clubs, restaurants, hair salons, interior decorators				X		Consumers prefer endorsers with similar characteristics – even if the endorser is less service-experienced. In case of high preference heterogeneity services (night clubs) consumers focus more on endorser's similarity than on experiences.
Whittler and DiMeo (1991)		X	Fur coat, liquid detergent (fictitious); Telephone & frozen fruit beverage (familiar) (storyboard)	X	X	X			Participants showed more interest in additional information, had a higher purchase likelihood and evaluated both, the product and the advertisement, more positive when the endorser in ads were white not black.

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Study	Celebrity		Product	Similarity – values, lifestyle	Similarity – cultural background/ethnic identification	Similarity – physical appearance	Similarity – socio-demographics	Other	Findings
	Celebrity	Non-Celebrity							
Price, Feick, and Higie (1989)		X	Service providers: plumber & dry cleaner, restaurant & landscaper	X			X		Individuals with a similar lifestyle and demographics had a greater informational influence on service provider choices.
Woodside and Davenport (1974)		X	Tapes and cleaning kit	X					Increase in purchases when the similar product was already purchased by the salesperson (i.e., same type of music).
Brock's (1965)		X	Painted picture					X	Consumers were willing to pay a higher price for a painted picture from a salesperson with similar paint usage patterns rather than from one with a dissimilar level of paint consumption usage needs.
Evans (1963)		X	Life insurance policy				X		The more similar demographic and life-style characteristics, the more likely is a favorable response.

* These papers conducted content analyses. No distinction between celebrities or other endorser types were made.

Source: author's selection

3.2.5 The Match-up Hypothesis

The previous presented studies on source models discussed and evaluated the importance of the source and demonstrated that it is a necessary part in order to understand the endorsement process. However, research has also identified inconsistencies in their results. This increased the need for another approach explaining their findings: the match-up hypothesis. According to the match-up hypothesis, some sort of congruence, fit or match-up (used interchangeably) between the characteristics of the endorser in the advertisement and the characteristics of the product being advertised should be existent. Based on the findings, the match-up appears to enhance or interact with the dependent measures employed (e.g., Kahle and Homer 1985; Kamins 1990; Lynch and Schuler 1994). More precisely, the match-up between the product and endorser is expected to predict a positive impact on product and advertisement evaluations. In case of a mismatch between product image and endorser image, evaluations are suggested to decline. Comparing the match-up hypothesis with the source models articulately indicate that these source models cannot be sustained in their original way. These models only assume as long as attractiveness, credibility or similarity is given, any source is effective and a persuasive source for any type of product. Results even identified limitations of the source models with respect to product types. Thus, it is generally argued that those inconsistent results are partially explained by the match-up hypothesis.

Theoretical Basis for Match-up Hypothesis

There are different approaches examining the underlying mechanisms that facilitate effects of the match-up hypothesis and explain why the affect is greater when there is a congruence or match between endorsers and brands. According to Kahle and Homer (1985), the match-up hypothesis fits well with the social adaptation theory. The social adaptation theory (SA) assumes that the adaptive significance of information will determine its impact. Further, the source of information will only be used as long as it facilitates adaptation. Then, consumers will move to the next source. Applying this approach to the match-up hypothesis implies that an attractive female or male endorser may work as an effective source of information for a product that is somehow related to attractiveness (i.e., make up). This information can be conveyed quickly and thus supports the consumer in understanding the adaptive significance of the product before he or she moves to another source of information. If an attractive individual promotes a beauty product and also claims to use it, consumers tend to imply that this product can also enhance their physical attractiveness and therefore, consumers might

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interpret this product as the beauty formula (Kahle and Homer 1985; Kamins 1990). Their analyses resulted in a main effect of attractiveness: Consumers who saw an attractive endorser liked the product more than consumers who saw an unattractive source. Purchase intention and brand recall were also enhanced by source attractiveness. Kahle and Homer (1985, p. 959) came to the conclusion that “this finding fits the match-up hypothesis and social adaptation predictions because of the source’s informational value”.

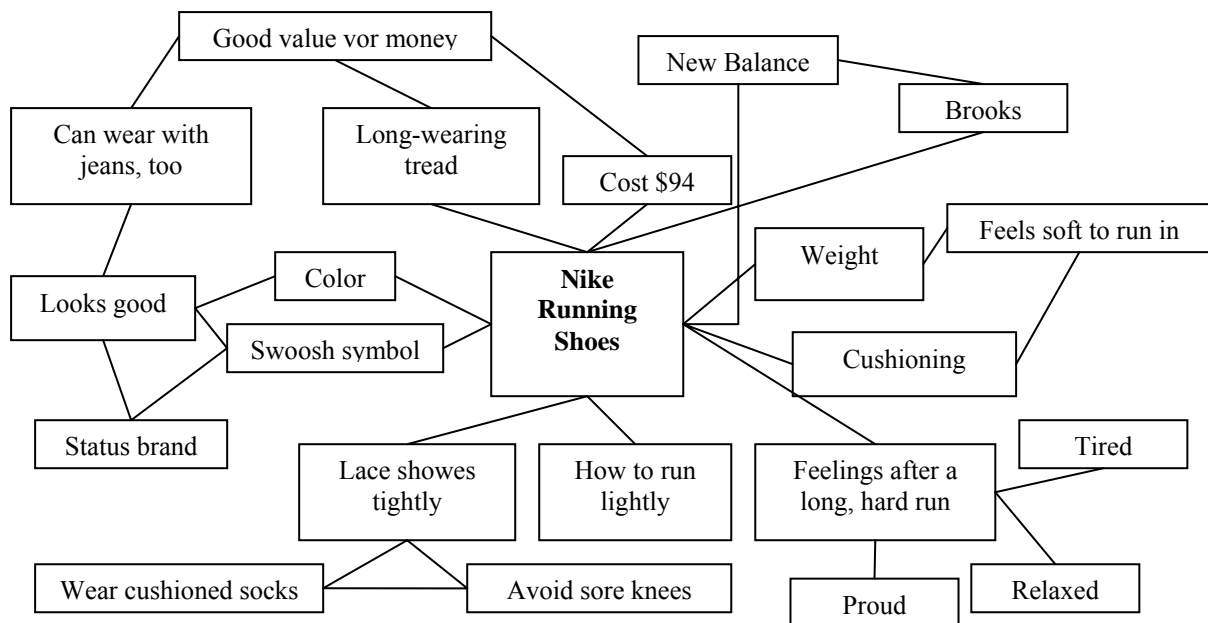
Classical conditioning is another well-acknowledged framework in order to understand match-up effects. It provides a mechanism by which an associative connection or link between a brand and an endorser can be built and is considered to be an excellent example of basic associative learning theory (Till 1998). Pairing an unconditioned stimulus with a conditioned stimulus in order to elicit the conditioned response is the basic idea behind classical conditioning. An unconditioned stimulus (US) is a stimulus that naturally triggers a response whereas the conditioned stimulus (CS) is a previously neutral stimulus that is being paired with the unconditioned stimulus, and eventually elicits the conditioned response (Dickinson and Mackintosh 1978; Shimp 1991). The authors build their idea on the work of Einhorn and Hogarth (1986) suggesting CS/US belongingness increases awareness and recognition of the CS/US pairing. CS/US belongingness can be equated with the similarity between two stimuli or the match between endorser (US) and brand (CS),³⁸ resulting in a facilitated conditioning (Till, Stanley, and Priluck 2008). The authors found a repetition of CS/US exposure resulted in more favorable brand attitudes with a brand-celebrity match, which provides further evidence for the match-up hypothesis.

Associative learning theory is suggested to be another appropriate framework to assess match-up effects (Till and Busler 2000). Basically, an associative network structure consists of nodes or links between concepts (Anderson 1983). With regard to the endorsement context, an associative link can be built between the endorser and the brand. It is already shown that this link can be easily built if the connection (e.g., perceived connection between the endorser and the brand) somehow belongs together or matches (Hamm, Vaitl, and Lang 1989). This is consistent with the match-up hypothesis that calls for a congruence or match (e.g., Lynch and Schuler 1994). Lynch and Schuler (1994) proposed an explanation for the match-up theory based on the schema theory which belongs to associative learning methods. When consumers

³⁸ Till, Stanley, and Priluck (2008) used fictitious brands, because no associations have been attached to them in order to represent neutral stimuli. Unknown brands have also been found to be more effective in classical conditioning (Shimp, Stuart, and Engle 1991).

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first receive information about a new product, they store pieces of information about the subject in their memory which is being constantly organized and reorganized as new links between pieces of information (Gotlieb and Sarel 1991; Schiffmann and Kanuk 2004). As they get more knowledge of the subject, they form structures of knowledge in memory or networks consisting of nodes with links between and among them (associative network structure). Therefore, consumers expand their associative networks of linked meanings and are able to recall information in clusters of thoughts, ideas and symbols known as a schema (Schiffmann and Kanuk 2004; Peter and Olson 2008). For example, a consumer's knowledge about Nike running shoes is presented in an associative network of knowledge or a schema in figure 7.



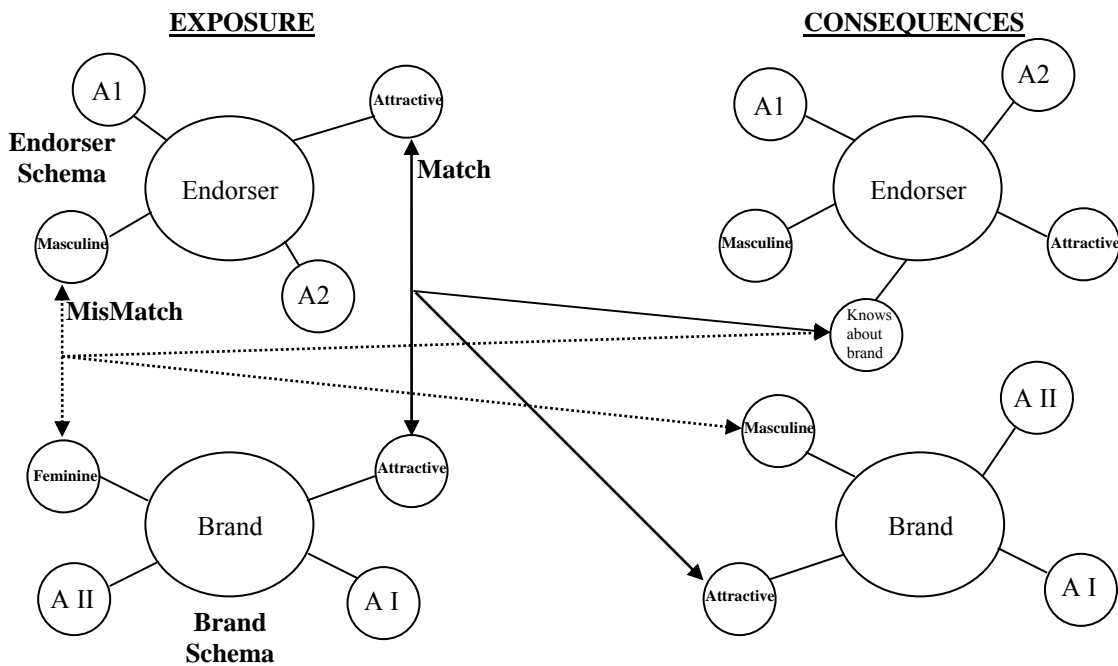
Source: Peter and Olson 2008, p. 56

Figure 7: An Associative Network of Knowledge or Schema

According to Lynch and Schuler (1994, p. 423) “such an explanation would be consistent with the social adaptation basis of the match-up hypothesis explored by Kahle and Homer (1985) and Kamins (1990)”. Also Homer and Kahle (1986, p. 52) highlight the role of schemata for the social adaptation process by saying that consumers adapt to environmental situations “by assimilating new information into existing schemata while accommodating mental structures to incorporate new, discrepant information”. With regard to schema theory, Lynch and Schuler (1994, p. 425) suggest that “the match, in effect, is responsible for creating new meanings by synthesizing information about the spokesperson and information about the product (and transferring this new meaning to the schema of the spokesperson).” Therefore,

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the match is assumed to impact brand and endorser schemata. The interactions of these schemata are shown in figure 8 representing how mental structures can be connected.



Source: Adapted from Lynch and Schuler 1994, p. 424 and 426

Figure 8: Consequences of Endorser-Brand Match and Mismatch³⁹

Figure 8 illustrates how matching and mismatching attributes (A) in endorser-brand schemata can influence consumer's perceptions of brand and endorser schemata⁴⁰. According to figure 8 two options seem possible: A match between the attractive endorser and the attractiveness-related brand can add the attribute "endorser understands brand X" to the endorser schema. Furthermore, Lynch and Schuler (1994) explain that the brand schema is not changed in this case because "attractive" was already a part of the schema. However, a match between brand and endorser attributes goes along with a greater likelihood of building an associative link (Till 1998) which might translate in an intensification of that link. That is, it might not change the perception of attractiveness but the perceived intensity or strength of attractiveness might be updated according to priming theory. Priming is a commonly used technique in cognitive social psychology and states that individual's previous exposure to a stimulus (e.g., word, picture) has an influence on his/her responses to the subsequent stimulus. Tormala and Petty (2007, p. 18) state "for instance, one might judge a target person as a more (assimilation) or

³⁹ Attributes (A) include any thoughts, ideas and symbols related to the brand and endorser.

⁴⁰ In Study III and IV, brand personality dimensions are selected as attributes.

less (contrast) hostile after initial exposure to a hostile individual”. Based on priming theory and specifically the assimilation perspective, exposure to any information (i.e., personality of endorser) reinforcing brand personality perceptions should lead to a strengthened brand personality perception – which is assessed in Study III.

A mismatch between the masculine endorser and the feminine brand can produce changes in the perceived brand gender. Lynch and Schuler (1994) proposed that any incongruent information or mismatch (i.e., masculine vs. feminine) is assimilated into the existing brand schema, which is consistent with the personality transfer from the endorser to the brand (McCracken 1989). However, from the perspective of priming theory, contrast effects can occur in this case. According to Tormala and Petty (2007, p. 18) “contrast occurs when a person’s judgment of a target stimulus shifts away from the context.” Based on priming theory and specifically the contrast perspective, exposure to any dissimilar contextual information (i.e., personality of endorser) with the brand personality dimension should lead to a strengthened brand personality perception (i.e., shift away from endorser personality) – which is assessed in Study IV.

In sum, all theories provide a slightly different theoretical justification for the match-up hypothesis and endorsement effectiveness. In this dissertation, the hypotheses in Study III and Study IV are formulated by integrating the match-up hypothesis and priming theory (see section 4.3.2).

Empirical Evidence for Match-up Hypothesis

Researchers suggest endorser effectiveness depends on several factors including the match-up condition. According to the match-up hypothesis, endorsers are most effective when they are perceived as appropriate endorser for the product and match on a selected basis (Kahle and Homer 1985; McCracken 1989; Kamins 1990). In addition, Erdogan, Baker, and Tagg (2001) conducted an experiment exploring the point of view of practitioners (advertising agencies). In an exploratory survey, managers from these agencies were asked to provide information regarding the important factors for endorser selection. Later, in a mail survey a practitioner sample had to rate these factors along with other endorser characteristics assembled through literature. Findings revealed that the match or congruence between endorser and product is considered to be one of the most important endorser characteristics (see appendix A for other endorser characteristics presented in a rank order).

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The match-up can be based on several dimensions. Most of the research investigated the effect of endorser-product match-ups on consumer responses by selecting endorser physical attractiveness, expertise or trustworthiness as the match-up factor.

This research stream was first investigated with a focus on physical attractiveness. For example, consumers might perceive a supermodel to be a great choice for a cosmetics' company such as L'Oreal or Schwarzkopf or luxury goods but not appropriate for an investment company, since the use of such a product can enhance one's beauty. A significant work, conducted by Kahle and Homer (1985), selected high attractive and low attractive celebrities and included them in a booklet with Edge razors. One main characteristic of the Edge razor is its ability to enhance beauty by clean-shaving the face, legs or other parts of the body. Results showed consumers' brand recall for Edge were higher and they were more likely to purchase the product after the exposure to an attractive rather than an unattractive celebrity. Based on their results, they argued "a more probable explanation invokes the match-up hypothesis and the SA theory that physical attractiveness is a source of information" (Kahle and Homer 1985, p. 959).

Even in earlier attempts, the need for a congruency was proposed (e.g., Kanungo and Pang 1973; Peterson and Kerin 1977). For example, the study of Baker and Churchill (1977) was closely related to the match-up hypothesis. They manipulated physical attractiveness and chose advertisements promoting new brands including perfume, cologne and aftershave that were evaluated by females and males. The hypothesis (among others) was tested if physically attractive models "will have a stronger, positive impact on the ratings provided by both males and females when the advertised product has romantic overtones than when the advertised product does not have such overtones" (Baker and Churchill 1977, p. 542). A higher purchase intention was only found when attractive female models were promoting products with a romantic overtone. This result suggests an interaction effect of physical attractiveness and the type of product which reflects a spirit of the match-up hypothesis.

Kamins (1990) replicated and expanded these studies to test for the match-up hypothesis. His study manipulated the product along with the manipulation of endorser's attractiveness that was, according to him, not done on purpose so far. A luxury car was chosen as the attractive-related product and home computers as -unrelated product. Consistent with the predictions from the match-up hypothesis they found an advertisement with an attractiveness-related product and an attractive endorser (compared to a less attractive endorser) resulted in higher endorser credibility and positive attitudes toward the advertisement. However, results provided no effects on purchase intention. Furthermore, for the attractiveness-unrelated

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product there was no difference in consumer responses when an unattractive or attractive endorser was selected.

Instead of pairing low attractive endorsers with attractiveness-related products versus high attractive endorsers, Bower and Landreth (2001) selected normally attractive endorsers as a counterpart of highly attractive endorsers. In line with past results, their findings also revealed highly attractive endorsers resulted in higher evaluations for beauty enhancing products. Moreover, results also showed there was no advantage in pairing problem-solving products with highly attractive models limiting the importance of attractiveness and confirming the significant role of match-up.

However, there are also researchers questioning the key role of match-up and highlighting the importance of the attractiveness. For example, Praxmarer (2006) identified positive effects of an endorser's facial beauty for both product types, the attractiveness-related and -unrelated product, suggesting that beauty is a better recommendation than anything else. From a practical perspective and in order to underline the relevance of attractiveness, Solomon, Ashmore, and Longo (1992) explored attractiveness to be a multidimensional construct, they identified six different types of good looks⁴¹ and even proposed the beauty-match-up hypothesis. A set of photographs from large modeling agencies was rated by experts on a series of scales consisting of adjectives describing looks. Furthermore, they had to rate each model's look with specific products (perfume and women's magazines) regarding their congruency. The data revealed "content-specific looks with particular product and media images...implying that specific matches between additional looks and other products can also be orchestrated to more clearly convey intended brand images" (Solomon, Ashmore, and Longo 1992, p. 33). However, these matches were "based largely on intuition and are made with little or no empirical support" and are not only questioning the practitioner's ad-hoc decision-making but also the existence for today's society because of ideal image changes.

Extending the match-up hypothesis to a service encounter context, Koernig and Page (2002) investigated the influence of the service provider's attractiveness on expected service quality, trust and expertise of the service provider. Different to other approaches was an inclusion of the schema theory. Consumers first had to write down their thoughts regarding the services that were later on used in order to count their number of thoughts and evaluate the relatedness to service attractiveness. Findings revealed a positive effect of service provider attractiveness to be highest when it was congruent with consumer's expectations which indicates a match-up effect for perceptions of the service provider (trust and expertise) and service quality.

⁴¹ (1) Classic Beauty/Feminine, (2) Sensual/Exotic, (3) Sex-Kitten, (4) Trendy, (5) Cute and (6) Girl-Next-Door.

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Furthermore, the moderately attractive dentist and the highly attractive hairdresser were found to have the lowest number of negative thoughts related to attractiveness. Some thoughts regarding the highly attractive dentist were summarized by the authors and included sentences such as “He’s too good looking to trust” and “He is too good looking to be a dentist” questioning the role of (high) attractiveness again and suggesting that “consumers have different stereotypes for different types of services” that have to be responded adequately by firms (Koernig and Page 2002, p. 107).

As stated above, endorsers and products can also be paired on other match-up dimensions than physical attractiveness. Ohanian (1990) assessed endorser characteristics and showed in her study that endorser’s expertise was most closely related to purchase intention compared to the other characteristics physical attractiveness and trustworthiness. Therefore, she highlighted the role of expertise in order to understand endorsers’ effectiveness and this argument was used to investigate the match-up hypothesis from another perspective. Endorsers must be known for an achievement and to be successful in a particular field that will help consumers to believe in statements the endorser expresses in the advertisement. Expertise as a match-up dimension was selected in the study of Till and Busler (2000). They differentiated between expertise, represented by an athlete, and attractiveness, represented by an actor. An energy bar and a candy bar were chosen as the matching products. They found consumer’s brand attitudes toward the energy bar were more favorably when the endorser was an athlete rather than an actor. No difference in endorser type was found for the candy bar. In sum, findings showed “a match-up effect based on expertise, suggesting expertise, rather than attractiveness, may be more appropriate for matching products with celebrities” (Till and Busler 2000, p. 11). Confirming the importance of expertise as a match-up factor, Till, Stanley, and Priluck (2008) assessed the match-up hypothesis by applying classical conditioning. Simply pairing congruent endorsers with products resulted in higher conditioning⁴² as compared to the same product when paired with an incongruent endorser.

Slightly different to the previously presented studies, Liu, Yu-Ying, and Minghua (2007) manipulated levels of endorser attractiveness and match-up, and investigated the relations among endorser attractiveness and match-up for consumer’s purchase intention in sport marketing. Unlike other experimental designs they used scenarios with description of high,

⁴² Conditioning effects were measured in terms of brand attitude means at different times.

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medium and low attractive endorsers (instead of endorsers' pictures).⁴³ The match-up dimension was related to endorser's sports performance and athletic products advertised. An athlete and a sport drink were chosen as pair with a high match-up. Findings revealed that regardless of the attractiveness level, the high match-up level produced higher purchase intention than the low match-up did. However, they found that attractiveness affected consumer's purchase intention more when the match-up was low compared to the impact with a low attractive endorser and a high match-up. These results highlight the special role of attractiveness and raise concerns with the match-up as a key factor for endorsement effectiveness. However, this research was done in China and attractiveness might have another importance level there as compared to the United States where most other studies were conducted that question the attractiveness as a prerequisite in endorsement.

The same methodological design⁴⁴ was used by Schaefer and Keillor (1997) with expertise as a match-up factor. Additionally, they investigated the role of involvement and found that the importance of match-up enhances with increasing levels of involvement. In the low involvement condition there was no interaction between match-up and attitude suggesting that marketers should highly focus on endorser employment in case of high product involvements. In another study, researchers adopted procedures for qualitative judgments in order to provide a better insight into match-up developments (Mittelstaedt, Riesz, and Burns 1994). They found no consistent explanations⁴⁵ why consumers believed the endorsement to be effective or not. The authors argue that the evaluation of endorsement effectiveness is a "function of the unique relationships between products and endorsers, rather than just the nature of the product or the endorser" (Mittelstaedt, Riesz, and Burns 1994, p. 62).

Exploring the importance of other match-up factors, Lynch and Schuler (1994) assessed the match between endorser's muscularity and products related to muscularity. Results revealed, the higher the muscularity of the endorser and the higher the match between endorser trait and product attribute, the higher is the perceived knowledge. They suggest that the match might transfer meanings and "facilitate the transfer to the schema of the spokesperson" (Lynch and Schuler 1994, p. 441).

⁴³ For example, scenario 1 (the high attractive endorser): "Mr. A is a very outstanding, successful, professional athlete [...] He usually devotes himself to public, non-profit charity activities. Besides, Mr. A owns balanced muscle, wonderful body shape, and really fancy face [...]" (Liu, Huang, and Minghua 2007, p. 364) and scenario 3 (the low attractive endorser): "[...] However, his physical appearances are really unbalanced, his body shape is quite weird; no one will deny that he is quite ugly [...]" (Liu, Huang, and Minghua 2007, p. 364).

⁴⁴ Biographical sketches were given for endorser descriptions. The advertisements included the same illustrations of several men applying the cologne to his face only differing in their activity (hang gliding with a mountain versus tennis player returning a serve).

⁴⁵ This means that there is no consistent pattern of explanation variables for all celebrities. Rather, each celebrity-product combination is shown to have its own possible explanation to be effective or ineffective.

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A very significant and quite different work was conducted by Kirmani and Shiv (1998) in order to investigate when sources may serve as persuasive arguments or peripheral cues. They chose ruggedness as the match-up dimension, and their findings indicated higher levels of congruity led to more favorable brand attitudes under high-issue-relevant elaboration⁴⁶. This clearly demonstrates that “endorsers were used as persuasive arguments when issue-relevant elaboration was high and when endorser’s accessible associations matched or did not match the brand positioning” (Kirmani and Shiv 1998, p. 44).

Overall, empirical evidence is summarized for the match-up hypothesis and basically reveals a match-up between endorser and the product is important to generate favorable attitudes. The studies explicitly show a match-up can emerge from specific endorser and product characteristics evaluated in different experimental designs. Studies focusing on physical attractiveness, as the match-up dimension, clearly demonstrate an attractive endorser is not always the best choice for product endorsement. Further, they provide insights why some earlier discussed studies failed to find the expected attractiveness-halo effect (see section 2.2.3). However, these studies still indicate inconsistencies in their findings. Therefore, the more recent work has tried to go beyond physical attractiveness as a match-up dimension and the idea “what is beautiful is good” stereotype, and presented other match-up factors that work in some cases even better than attractiveness. Very little emphasis has been placed on other specific brand related characteristics that companies mostly try to communicate in their advertising campaigns. Most of the studies focused especially on attractiveness or expertise in particular areas as match-up dimensions. Therefore, many researchers ask for other effective dimensions that may serve as a driver for the match-up hypothesis (e.g., Ohanian 1990; Kamins 1990; Kirmani and Shiv 1998) which is tested in Study III and IV.

In conclusion, these findings provide a basis for the attempt to match endorsers and products. They highlight the challenges for advertisers when they have to select endorsers for their advertising campaign and emphasize that marketers should pay attention to the fact that characteristics of the endorser interact with the characteristics of the product being advertised. Table 7 gives an overview of the previous presented studies among others, differentiated by selected match-up dimensions, theories authors based their studies on, key findings, and other details⁴⁷.

⁴⁶ Number of product-relevant thoughts and congruity thoughts were suggested to be a good measure for high-issue-elaboration.

⁴⁷ Not all existing studies are listed here. The author categorized different dependent variables and included the studies that fit the most.

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Table 7: Summary: Methods and Findings of Advertising Effects of Match-up

Study	Celebrity	Non-Celebrity	Product	Theory	Match-up dimension	Findings
Till, Stanley, and Priluck (2008)	X		Sport drink (fictitious brand)	Classical Conditioning	Expertise (athletics)	Repeatedly paired images of a brand with a better matched celebrity resulted in stronger conditioning than with a poorly matched celebrity.
Liu, Yu-Ying, and Minghua (2007)		X ⁴⁸	Sport shoes and sport drinks (high match); Toilet and plug (low match) (fictitious brands)	Social Adaptation	Expertise (athletic performance)	High attractiveness (compared to middle-/low-level attractiveness) resulted in highest purchase intention independent of the match-up level.
Praxmarer (2006)	X		Vacuum cleaner (attractiveness-unrelated); Lipstick (attractiveness-related product)	Social Adaptation	Attractiveness	Endorser's attractiveness positively influenced consumer's attitude toward the ad and product and purchase intention for attractiveness-related and -unrelated product. The effect of endorser's beauty is greater if an attractiveness-related product is advertised vs. an attractiveness-unrelated product.
Koernig and Page (2002)		X	Hair cut (service related to attractiveness); Dental checkup (service unrelated to attractiveness)	Schema Theory	Attractiveness	Service quality, trust and expertise were highest when service provider's attractiveness increased for the service related to attractiveness. The opposite relation was identified for all three attractiveness levels in the attractiveness-unrelated condition.
Bower and Landreth (2001)		X	Acne concealer, medicine, shampoo (problem-solving products); Lipstick, earrings, perfume (beauty enhancing products)	Elaboration Likelihood (centrally processing)	Attractiveness	With higher levels of involvement, consumers had greater purchase intentions for perfume when exposed to highly attractive endorsers vs. normally attractive endorsers.

⁴⁸Descriptions of endorsers were employed in form of scenarios.

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Study	Celebrity	Non-Celebrity	Product	Theory	Match-up dimension	Findings
Till and Busler (2000)		X ⁴⁹	Pen and men's fragrances/cologne; Candy and energy bars (print)	Social Adaptation	Attractiveness; Expertise	Brand attitude and purchase intention were higher in the attractive endorser condition irrespective of the product type. Thus, no match-up effect based on physical attractiveness. Expertise was more appropriate for matching products with endorsers: For the candy bar: no difference in brand attitude based on endorser type (athlete or actor). For the energy bar brand attitude ("gives extra energy") was higher if the endorser was an athlete rather than an actor.
Kirmani and Shiv (1998)	X		Omicron watch	Associative Network (Memory) Model ELM and HSM	Ruggedness; Fun vs. serious	Celebrity congruity affected brand attitudes and beliefs under high issue-relevant elaboration but not under low issue-relevant elaboration. Higher levels of congruity led to more favorable brand attitudes under high-issue elaboration.
Schaefer and Keillor (1997)		X	Fictitious brands of male cologne (sketches)	Elaboration Likelihood	Expertise	High match/high involvement consumers rated brands higher in brand attitude than high match/low involvement consumers did.
Martin (1996)		X ⁵⁰	Craftsman power saw; Umbro gym shorts; Nordic track exercise equipment; Calgon bath oil beads	Schema Theory	Image factors ⁵¹	The type of sport matters for each product, e.g., an endorsement from a hockey player was rated much more positively than a basketball player (for craftsman power saws). The match between the product and sport type image could explain the variation in consumer evaluation to different product-sport type combinations.

⁴⁹ A fictitious endorser was created with background information and a name.

⁵⁰ Only fictitious endorsers from different sport types were selected. "Participants were also asked how they would respond if an athlete from each of the three sports were to endorse the four products...in terms of the endorsement's credibility, believability, interest level..., and if it would be a good fit..." (Martin 1996, p. 31).

⁵¹ Subjects had to rate characteristics such as reliable, calm, rational, energetic (both products and sport type).

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Study	Celebrity	Non-Celebrity	Product	Theory	Match-up dimension	Findings
Kamins and Gupta (1994)	X	X ⁵²	Personal computer, running shoes	N.A.	“Image” ⁵³	The higher the match between celebrity and product the higher is the believability of the celebrity (versus non-celebrity). Product appeared more attractive (attitude toward the product) when celebrity matched the product (versus non-celebrity).
Lynch and Schuler (1994)		X	TV set, tanning salons, legal services, male/female-targeted products, PCs, Haircare, household, exercise equipment, shaving products, car batteries	Schema Theory	Expertise (muscularity)	As congruency between endorser trait and product attribute increases (muscularity), the higher is the perceived knowledge about the product (exercise equipment, shaving products). Muscularity affected perceptions of product durability and not strength.
Mittelstaedt, Riesz, and Burns (1994)	X		Orange juice; Hair conditioner; Youth foundation	N.A.	Authors tried to identify the match-up factor.	No consistent explanation was found for all products. However, with respect to the hair conditioner if the focus was only on two celebrities, characteristic and appearance of the celebrity and product issues were the main determinants for endorser effectiveness, i.e., match-up.
Parekh and Kanekar (1994)		X	Soap and shampoo (beauty products) Stationary and ballpoint pen (non-beauty products)	N.A.	Attractiveness	A significant interaction between physical attractiveness and product type was found. Beauty products were rated higher in product quality for the attractive model.

⁵² Two endorser types were included: celebrity versus non-celebrity.

⁵³ Congruency was measured with a scale that “indicates on a range from “incongruent (1) to “congruent” (5) the degree to which they perceived the image of each celebrity to be congruent with the role of the spokesperson for the product category” (Kamins and Gupta 1994, p. 575). This was repeated for the non-celebrity.

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Study	Celebrity	Non-Celebrity	Product	Theory	Match-up dimension	Findings
Misra and Beatty (1990)	X		Crispy snack; Jeans; Coffee; Energy drink; Board game; Wine	Associative Network; Schema Theory	Characteristics transferred through brand names ⁵⁴	Recall of brand information was higher when the spokesperson was congruent with the brand ⁵⁵ . When the celebrity spokesperson was congruent with the brand, a transfer of affect took place and was more positive than with the incongruent brand.
Ohanian (1990)	X		Perfume; Designer jeans; Tennis racket; Cologne	N.A.	Attractiveness Expertise, Trustworthiness	The type of celebrity can affect consumer's attitudes toward the ad, the product & purchase intentions for the product. Expertise (and not physical attractiveness) was the most significant factor explaining purchase intention.
Kahle and Homer (1985)	X		Edge disposable razor and toothpaste	Social Adaptation	Attractiveness	Liking, purchase intention & brand recall of the Edge razor was higher when consumers saw an endorsement by an attractive endorser. Involve-ment enhanced recall, but attractiveness had a greater effect on recall.
Baker and Churchill (1977)		X	Ads for coffee; Perfume; Cologne or aftershave (print)	N.A.	Attractiveness	When the attractive female endorser was advertising the product with a romantic overtone, the purchase intention was higher.
Peterson and Kerin (1977)		X	Body oil (feminine product); Ratchet set (masculine)	N.A.	Gender ⁵⁶ (stereotypes)	A seductive model and the body oil product produced higher scores for product quality and reputation scores for the manufacturer than others.
Kanungo and Pang (1973)		X	Car; Sofa Stereo; TV	N.A.	Gender ⁵⁷ (stereotypes)	The car (sofa) advertisement including male (female) endorsers generated the most favorable product evaluations. The sofa advertisement including the male endorser produced negative evaluations. For the stereo advertisement, both produced favorable evaluations.

Source: author's selection

⁵⁴ For example, Clint Eastwood was described as rugged and tough (results from a free association test). Brand names were chosen with respect to the meaning of the product in order to be seen as being congruent with the characteristics of one celebrity (unitough jeans and Clint Eastwood) but incongruent with the other brand (Carol Burnett).

⁵⁵ Two endorser types were included: celebrity versus non-celebrity.

⁵⁶ A seductive female endorser was selected to advertise body oil (has sexual overtones).

⁵⁷ Stereotypes tested by comparing the role of males versus females.

3.3 Summary and Relevance for the Empirical Studies

The third chapter clearly highlights the role of brand personality as a strategic communication concept that is shown to be highly relevant for managers and consumers. In a competitive marketplace, managers can differentiate their brands by generating strong brand personalities that appeal to their target consumers. The theoretical models explaining brand personality effectiveness clearly show its relevance for consumers and highlight its impact on brand attitude, preference, and loyalty. Consumers build relationships with brands, trust them, and care for them. More importantly, brands are used for self-expression purposes. Therefore, by studying target consumers and building brands that fit their personalities managers can strengthen brand loyalty and establish long-lasting brand relationships. One way is to select appropriate endorsers who can strengthen the brand's image. The literature on marketing distinguishes between different types of endorsers. In the present dissertation, celebrities are excluded because consumers might have enduring attitudes toward them or most of the celebrities have endorsement contracts in any brands that would interfere with the present empirical work. Therefore, the present work includes only the typical consumer, who gained a lot of attention recently. More precisely, typical consumers, who are associated with specific personality traits, represent the source of information. Based on the meaning transfer model, personality dimensions can be transferred from endorsers to brands even when endorser characteristics are not explicitly communicated but inferred implicitly (Batra and Homer 2004) – this will also be the case in the Study III and IV.

Brand personality is chosen in the empirical studies because of its importance for consumers and its human character which makes it possible to manipulate endorser's personality inferred from his or her face. Further, findings identified the malleable character of brand personality and indicated that consumers update their brand personality traits depending on the incoming brand information. By including endorsers their personality traits are made accessible in respondent's mind that might cause to update brand personality inferences (Johar, Sengupta, and Aaker 2005). The malleable nature of brand personality supports the motivation to investigate differences in brand personality perception by priming brands with endorsers – which is aimed in Study III and IV.

Based on the Elaboration Likelihood Model consumers have two routes to persuasion when they are exposed to an advertisement. Depending on consumers' level of product involvement they choose either the central or the peripheral route. Under the condition of low involvement

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the consumers look for other information than product information and therefore rely on other simplistic cues, i.e., endorser liking. That is, the endorser is becoming a very effective determinant of attitude formation. More specifically, Kirmani and Shiv (1998) found that the perceived match between brand and endorser (i.e., source congruity) is likely to be a persuasive argument which underscores the relevance of the match-up in Study III and IV.

Source effects have been extensively discussed in the previous sections. Thereby, most research has focused on endorser attractiveness, credibility, and consumer's perceived self-similarity with the endorser. Findings indicate positive effects⁵⁸ on a variety of variables related to the brand and advertisement when consumers perceive endorsers as attractive, credible, and similar to themselves. Because of their highly relevant nature in the endorsement process, attractiveness and similarity are integrated in the empirical studies III and IV as moderating variables that are suggested to influence endorsers' impact on brand personality.

The match-up hypothesis is the basic framework which forms the basis of the empirical studies. Research has shown that a match-up between the endorser and brand is essential in order to generate favorable brand perceptions. According to priming theory, a match-up (mismatch) can be identified as an assimilation (contrast) effect that strengthens the attributes (brand perceptions) in the existing brand schema. This has not been explored yet and represents one of the objectives in Study III and IV.

According to the literature review most studies have focused on attractiveness or expertise as match-up dimensions, and results also showed inconsistencies that necessitates other effective match-up factors. Study III and IV try to close this research gap by including brand personality as the match-up dimension.

The following chapter 4 identifies the boost effects and presents the five empirical studies. Specifically, the studies (I-V) will assess psychological and neural mechanisms in how endorser faces impact brand personality trait impressions.

⁵⁸ However, these source effects have shown inconsistencies in findings.

4. Testing the Boost Effects: Psychological and Neural Mechanisms in How Faces Impact Brand Personality Trait Impressions

This chapter introduces the empirical studies and builds upon the theories and findings presented in the previous chapters (see section 2.3 and 3.3 for a summary). Five empirical studies are presented which differ in methodology and mode of exposure.

Study I aims at identifying holistic face types by assessing and analyzing expert ratings of facial features. The objective of Study II is to establish systematic relations between these holistic face types and personality trait inferences resulting from them. Other than Study I, Study II uses a questionnaire including psychological constructs that are rated by a student sample. Study III and IV explore the influence of matching versus mismatching endorser faces (on a specific personality dimension) on brand impressions under the condition of a different mode of stimuli exposure. Analyses result in the assimilation and contrast boost effect. The final Study V investigates both boost effects from a neuroscientific perspective and further assesses the respondent's decision in a behavioral experiment that was a quasi replication of the neuroimaging experiment aimed to assess the brain activity during the task. An overview summarizing important details of the studies is presented in table 8.

4. Testing the Boost Effects: Psychological and Neural Mechanisms in How Faces Impact Brand Personality Trait Impressions

Table 8: Overview of Empirical Studies

	Study I	Study II	Study III	Study IV	Study V
Objective	<i>Holistic Face Types</i>	<i>Personality Trait Inferences from Holistic Face Types</i>	Testing the <i>Assimilation Boost Effect</i> : presenting brands side by side with matching faces enhances brand personality inferences; Testing alternative explanations	Testing the <i>Contrast Boost Effect</i> : presenting first the mismatching face and then the brand enhances brand personality inferences; Testing alternative explanations	<i>Neural Correlates of the Boost Effects</i>
Method	Psychological measurement ⁵⁹ (expert ratings; N=60)	Psychological measurement (student sample N=165)	Psychological measurement (student sample; N=160 pretest, N=369 main study)	Psychological measurement (student sample; N=120)	Behavioral ⁶⁰ and functional neuro-imaging experiment (student sample; N=22)
Mode of Exposure	Faces in isolation	Faces in isolation	Simultaneous presentation of faces and brands	Sequential presentation of faces and brands	Simultaneous and sequential presentation of faces and brands

Source: author's own composition

All empirical studies are introduced with the same structure in the next sections. First, the study objectives are shortly presented followed by the theoretical backgrounds. Basically, these backgrounds summarize the most important findings from the previous chapters in order to derive hypotheses and explain the rationale behind the studies as well as the underlying assumptions. Next, insights into study details including information about the sample, data collection, measurement scales, and the stimuli presentation are given in the study method section. The final two sections present study results and a discussion of these results. Chapter 4 closes with a general discussion including managerial implications, advancements of theory, and directions for future research.

⁵⁹ Psychological measurement is a method of testing and measuring psychological constructs that are used in marketing and consumer behavior research.

⁶⁰ Behavioral experiments are simply a tool which record consumer's decision by pressing a button instead of checking Likert scales; generally, they are used to explore how people respond and adapt to their own outcomes. However, in this experiment participants were asked whether they want to purchase the presented brand or not.

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4.1 Study I: Identification of Holistic Face Types

4.1.1 Objectives

The literature very much supports the holistic nature of face perception as a basic assumption for Study I (see section 2.1). The objective of the first empirical study is to identify holistic face types which are rooted in unique combinations of facial features. Central to the first study is the systematic identification and assembly of facial features as a basis for identifying holistic face types and their underlying factors. Table 9 summarizes important details of Study I.

Table 9: Overview of Empirical Study I

	Study I	Study II	Study III	Study IV	Study V
Objective	<i>Holistic Face Types</i>	<i>Personality Trait Inferences from Holistic Face Types</i>	Testing the <i>Assimilation Boost Effect</i> : presenting brands side by side with matching faces enhances brand personality inferences; Testing alternative explanations	Testing the <i>Contrast Boost Effect</i> : presenting first the mismatching face and then the brand enhances brand personality inferences; Testing alternative explanations	<i>Neural Correlates of the Boost Effects</i>
Method	Psychological measurement (expert ratings; N=60)	Psychological measurement (student sample; N=165)	Psychological measurement (student sample; N=160 pretest, N=369 main study)	Psychological measurement (student sample; N=120)	Behavioral and functional neuro-imaging experiment (student sample; N=22)
Mode of Exposure	Faces in isolation	Faces in isolation	Simultaneous presentation of faces and brands	Sequential presentation of faces and brands	Simultaneous and sequential presentation of faces and brands

Source: author's own composition

4.1.2 Theoretical Background

Research on human faces covers a variety of issues ranging from facial features to facial expressions and grooming. This research concentrates on anatomical facial features that drive a holistic perception. In line with Gestalt psychology (Koffka 1922; Wertheimer 1925), the author looks at faces as holistic types emerging from the configuration of a number of features. Further, McArthur and Baron (1983) claimed that individuals extract social knowledge from complex higher order configuration of stimulus information. Therefore, the

greatest impact on social perception is likely to result from the overall variations in the holistic facial configuration. This perspective recognizes that impressions do not emanate from any single facial feature but rather from the entire gestalt of many features working together holistically (Hole 1994; Tanaka and Sengco 1997) (see section 2.1 for a review).

Although a few studies on endorser characteristics have adopted this holistic perspective and have identified endorser types, such as “classic beauty” or “trendy” on the basis of their underlying features (Solomon, Ashmore, and Longo 1992), these types of “good looks” evolved from a narrow sample of female models selected for their attractiveness and were based in above-the-waist or full-body shots with few links to specific facial features. Moreover, other research has categorized human faces into types on the basis of age-related transformations in appearance, identifying neonate (babyish), mature, and senescence types (Guthrie 1976; Keating, Randall, Kendrick, and Gutshall 2003). Another well-acknowledged categorization of specific features into face types includes femininity versus masculinity. For example, masculinity is defined through the possession of an angular face rather than a round face, thicker eyebrows, visible beard stubble, and smaller nose width (Cunningham et al. 1990). Yet, these types account only for selected facial features and are mostly tied to expressive or grooming features. Thus, previous categorizations relate more to personal and social factors and less to fundamental anatomical features (Cunningham et al. 1995). In sum, although prior research supports the notion of holistic face perception, it falls short of producing a meaningful taxonomy of generic prototypical faces or endorser types.

4.1.3 Method

The approach closely follows the methodology successfully employed in research on visual marketing stimuli (i.e., Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008) in order to identify holistic types of faces. Specific methodological steps include:

- (1) determining salient facial features,
- (2) selecting a set of faces representative of the variation in facial features (i.e., faces scoring high and low on a specific feature),
- (3) collecting expert ratings of the facial features for the faces in the set, and
- (4) developing a typology of holistic faces based on similarities and differences in those expert ratings of facial features.

Facial Features

To identify prototypical holistic faces, an initial list of facial features was generated by reviewing academic and trade journals. Ten professionals (including a plastic surgeon, make-up artist, fashion and advertising models, photographer, graphic artist, model agent, and brand managers) expanded this list by adding or further detailing the differentiating features of human faces. Integrating their feedback with the initial list a final list of 112 facial features was prepared. These facial features were described with poles on a semantic scale; for example, as face length (short—long), width at cheekbones (narrow—wide), width at mouth (narrow—wide), face outline (chubby—skinny), skin complexion (light—dark), skin purity (fine pores—large pores), forehead bulge (obscure—pronounced), eye diameter (small—large), and eyebrows distance (small—large). Appendix B lists all facial features suggested by experts to differentiate holistic types of faces.

Stimuli Selection and Professional Ratings of Facial Features

Drawing from a database specifically established for this type of research (Minear and Park 2004), a group of middle-aged professionals (N = 5) assembled a pool of faces representing large variance in those features, such as a face with small eyes, another with large eyes, a third with widely spaced eyes, and a fourth with narrowly spaced eyes. To control for age and ethnicity effects, the professionals focused on 20- to 45-year-old Caucasian faces. Another group of professionals (N = 5) validated this selection of faces, in an orthogonal-like design, reduced the overall number of faces as several faces exhibited more than one extreme feature. The final set of facial picture stimuli consisted of 165 high-resolution digital images, taken portrait-style before a uniformly white background, featuring relaxed expressions, straight gazes, and without any jewelry or special grooming. A relaxed facial expression is considered as a neutral face that has no obvious negative or positive expression – these faces were already evaluated on neutrality according to the database description. Subsequently, another set of professionals (N = 50) each rated a subset of no more than twelve faces on half of the facial features, using seven-point semantic differential scales.

4.1.4 Results

Facial Factors and their underlying Facial Features

Data analysis will follow established procedures (e.g., Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008). Unique to this approach, analyses were conducted at the stimulus rather than at the individual level. To obtain a score for each stimulus on a specific variable, individual ratings of a face are averaged (i.e., professional ratings). All remaining analyses were conducted using these averaged scores. Thus, the unit of analysis is the entire face, and the sample size for each analysis is the number of different faces ($N = 165$). An exploratory factor analysis with Varimax rotation for identifying facial factors instrumental in differentiating the holistic face types was performed. The analysis revealed 18 composite factors and seven single-item factors explaining 77.58% of the variance. For example, the factor *symmetry* included three facial elements such as the face, eyes, and nose symmetry. Another example refers to facial features such as face width at cheeks, face width at mouth, face fullness, cheeks fullness, and chin width that were describing the factor *face outline and fullness*. Item-factors correlations ranged from .51 to .89, and all Cronbach's alphas clearly exceeded .60 (Nunally 1978). Composite and single-item factors and their constitutive facial elements are listed in table 10⁶¹.

⁶¹ Face factors are sorted by Cronbach's alpha.

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Table 10: Results of the EFA for Facial Elements

Face Factor	Feature/Element	Item-Factor-Correlation	α
Lip color/conspicuity	Lip color	.82	.91
	Lip color contrast with face	.78	
Eyes prominence	Eyes diameter	-.72	.90
	Eyes height	-.77	
	Eyes shape	.72	
	Eyes position in eyehole	.56	
Eyelashes appearance	Eyelashes presence (r)	.86	.89
	Eyelashes length	.87	
	Eyelashes shape	.82	
	Eyelashes fullness	.85	
Skin color composition	Skin color	.81	.88
	Skin color intensity	.81	
	Skin color naturalness	.82	
	Cheeks color	.81	
Skin composition	Skin structure	.70	.87
	Skin pureness	.75	
Face outline and fullness	Face width at cheeks	.80	.86
	Face width at mouth	.81	
	Face fullness (r)	.84	
	Cheeks fullness	.84	
	Chin width	.66	
Gender specific hair (facial)	Facial hair	.83	.86
	Facial hair beard	.78	
	Facial hair mustache	.80	
Age-specific factor	Double chin	.51	.86
	Skin crinkles	.70	
	Eyes crow's feet	.74	
	Eyes hooded	.62	
	Cheeks dimple	.73	
	Hair grey-haired	.61	
	Neck crinkles	.67	
Lip fullness (sensuality)	Lip upper fullness	.79	.84
	Lip lower fullness	.85	
	Lip contour upper lip	.65	
	Mouth size	.75	
Nose appearance	Nose width	.83	.83
	Nose width tip	.89	
	Nose shape (r)	.79	
	Nose width nares	.64	
Color contrast (naturalness)	Eyelashes color contrast with hair	-.71	.81
	Eyebrow color contrast with hair	-.69	
	Hair color number	-.80	
	Hair naturalness	-.63	

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Face Factor	Feature/Element	Item-Factor-Correlation	α
Ear appearance	Ear size	.78	.81
	Ear position	.63	
	Ear earlap	.70	
	Ear size earlap	.81	
	Ear jug	.59	
Eyebrow appearance	Eyebrow length	.73	.78
	Eyebrow width	.60	
	Eyebrow color	.64	
	Eyebrow fullness	.81	
Symmetry	Face symmetry	.78	.72
	Eyes symmetry	.72	
	Nose symmetry	.62	
Position	Eye position in face	.71	.68
	Eye distance eyebrow	.59	
	Eyebrow height in face	.85	
	Cheeks position in face	.57	
Nose size	Nose length	.80	.67
	Nose size	.62	
Forehead appearance	Forehead height	.62	.67
	Forehead bulge	.79	
Hair structure/fullness	Hair structure	.87	.61
	Hair fullness	.55	
<i>Single-item factors:</i>			
Lip-Proportion			
upper/lower lips			
Eyebrow shape			
Skin naturalness			
Cheeks-cheekbone's appearance			
Overall babyface			
Overall masculinity			
Overall femininity			
(r) reverse-coded item			

* Note: EFA was performed using principal component analysis with Varimax rotation.

Source: author's calculation

Holistic Face Types

The analysis aimed at identifying holistic face types based on similarities of the stimuli's facial features. It is the combination of facial features that drives holistic face types rather than any single feature. Therefore, cluster analysis was conducted to cluster faces into groups such that each group is homogenous with respect to previous identified facial factors as clustering variables (Aaker 1997; Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008). Based on the nature of the variables (interval scaled) the squared euclidean distance was selected as the measure of similarity. Further, the hierarchical clustering technique was employed and to compute distances between clusters, the ward method was utilized (Backhaus et al. 2000). Results of the cluster analysis suggested that ten clusters appeared to best describe the data. After interpretation of the data, ten holistic face types were labeled as:

- (1) Soft (I),
- (2) Hermaphrodite (II),
- (3) Muted (III),
- (4) Expressive (IV),
- (5) High-contrast (V),
- (6) Weathered (VI),
- (7) Classic-feminine (VII),
- (8) Handsome (VIII),
- (9) Determined (IX), and
- (10) Massive (X).

Furthermore, to determine what cluster-specific factor scores were significantly smaller or greater than the mean score across all clusters t-tests were performed. Table 11 lists the resulting holistic face types and their differentiating factors. A detailed description of these types is presented in the next section.

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Table 11: Holistic Face Types and Differentiating Factors

<i>Face factor</i>	<i>Holistic Face Type</i>										<i>Sample Mean</i>	<i>p</i>
	<i>I</i> (<i>N=17</i>)	<i>II</i> (<i>N=23</i>)	<i>III</i> (<i>N=4</i>)	<i>IV</i> (<i>N=17</i>)	<i>V</i> (<i>N=15</i>)	<i>VI</i> (<i>N=17</i>)	<i>VII</i> (<i>N=16</i>)	<i>VIII</i> (<i>N=27</i>)	<i>IX</i> (<i>N=10</i>)	<i>X</i> (<i>N=14</i>)		
<i>Multi-item factors:</i>												
Eyelashes appearance	3.87 ⁺	2.86	3.19	3.94 ⁺	3.74 ⁺	3.05	4.49 ⁺	3.51 ⁺	3.05	3.08	3.09	.001
Face outline and fullness	4.19 ⁺	3.86	4.00	4.15 ⁺	4.15 ⁺	3.92	4.20 ⁺	3.79	4.12 ⁺	3.97	3.90	.003
Age-specific factor	1.88 ⁻	1.85 ⁻	2.83	2.62	3.18 ⁺	3.85 ⁺	2.36 ⁻	2.15 ⁻	2.92 ⁺	4.09 ⁺	2.64	.002
Nose appearance	3.91	3.67 ⁻	3.56 ⁻	3.82	4.08	4.02	3.66 ⁻	4.13	4.27 ⁺	4.09	3.99	.001
Skin color composition*	3.29	1.95 ⁻	1.81 ⁻	2.88 ⁻	3.48 ⁺	3.09	2.64 ⁻	3.68 ⁺	3.04	3.70 ⁺	3.15	.001
Color contrast/naturalness	1.99 ⁻	2.27	3.69 ⁺	2.01 ⁻	3.62 ⁺	2.09 ⁻	4.11 ⁺	1.87 ⁻	1.52 ⁻	1.94 ⁻	2.38	.001
Ear appearance	1.86 ⁻	3.37 ⁺	2.50 ⁻	3.19 ⁺	2.68 ⁻	3.22 ⁺	1.86 ⁻	3.30 ⁺	3.82 ⁺	3.73 ⁺	2.91	.008
Lip fullness (sensuality)	4.57 ⁺	3.91 ⁺	2.75 ⁻	3.94 ⁺	3.49	2.74 ⁻	3.82	4.15 ⁺	2.62 ⁻	2.69 ⁻	3.63	.001
Eyebrow appearance	4.72	4.49	2.55 ⁻	4.83 ⁺	4.19 ⁻	3.20 ⁻	3.78 ⁻	5.32 ⁺	5.23 ⁺	4.78 ⁺	4.52	.002
Gender specific (facial) hair	1.20 ⁻	1.43 ⁻	1.83	1.19 ⁻	1.19 ⁻	1.52 ⁻	1.07 ⁻	2.92 ⁺	1.91	4.62 ⁺	1.88	.001
Position	3.87	3.88	3.63	4.01 ⁺	3.96	3.37 ⁻	3.78	3.72	4.07 ⁺	3.72	3.79	.001
Eyes prominence	4.31	4.36	3.69 ⁻	4.51 ⁺	4.21	4.01 ⁻	4.54 ⁺	4.48 ⁺	4.18	4.19	4.28	.001
Forehead appearance	3.53 ⁻	4.09	3.13 ⁻	3.87	4.30 ⁺	4.53 ⁺	3.95	4.18	4.86 ⁺	4.33 ⁺	4.05	.001
Nose Size	3.85	4.24 ⁺	2.63 ⁻	3.88	4.19	4.31 ⁺	3.93	4.19	3.64 ⁻	4.22 ⁺	4.03	.005
Symmetry*	2.96 ⁻	3.48	3.00 ⁻	3.70	3.50	3.83 ⁺	3.18 ⁻	3.98 ⁺	4.04 ⁺	4.22 ⁺	3.60	.001
Lip color/conspicuity	4.15 ⁺	3.22 ⁻	3.38	4.02 ⁺	3.98 ⁺	2.85 ⁻	4.43 ⁺	3.40	2.53 ⁻	2.50 ⁻	3.49	.003
Skin composition*	2.56 ⁻	3.37	2.63 ⁻	3.23	4.41 ⁺	3.81 ⁺	2.23 ⁻	3.14	4.24 ⁺	4.06 ⁺	3.28	.001
Hair structure/fullness	3.88	3.96 ⁺	3.00 ⁻	4.13 ⁺	3.87	3.06 ⁻	4.08 ⁺	3.68	2.57 ⁻	3.15 ⁻	3.64	.001
<i>Single-item factors:</i>												
Lip-Proportion upper/lower lip	3.35	3.30	2.75 ⁻	3.24	3.60	3.82 ⁺	3.75 ⁺	3.48	3.40	3.78 ⁺	3.49	.001
Eyebrow shape	4.94 ⁺	1.74 ⁻	5.75 ⁺	4.73 ⁺	5.73 ⁺	3.88 ⁻	4.88 ⁺	3.67 ⁻	5.43 ⁺	4.56	4.36	.001
Skin naturalness*	1.11 ⁻	1.26	1.25	1.63 ⁺	1.60	1.75 ⁺	1.20 ⁻	1.35	1.38	2.30 ⁺	1.46	.002
Cheeks-cheekbone's appearance*	4.18 ⁻	4.26	5.50 ⁺	4.29	4.27	4.94 ⁺	4.06 ⁻	4.41	4.98 ⁺	4.58	4.41	.001
Overall babyface*	4.00 ⁻	5.39	5.25	6.12 ⁺	5.00 ⁻	5.71	5.63	6.07 ⁺	6.12 ⁺	6.36 ⁺	5.55	.001
Overall masculinity*	4.82 ⁺	3.22 ⁻	3.50	4.76 ⁺	4.27 ⁺	3.41	5.44 ⁺	2.11 ⁻	2.76 ⁻	2.09 ⁻	3.61	.001
Overall femininity*	2.59 ⁻	4.39	4.00	3.18 ⁻	3.27 ⁻	4.76 ⁺	2.38 ⁻	6.00 ⁺	6.06 ⁺	6.63 ⁺	4.29	.001

Note: ⁺ indicates cluster mean scores significantly greater ($p < .01$) than pooled mean, and ⁻ indicates cluster means significantly smaller than pooled mean. * low ratings are associated with high skin lightness, symmetry, skin purity, skin naturalness, masculinity, femininity and babyface and high cheekbone's conspicuity

Source: author's calculation

4.1.5 Discussion

Study I identified ten holistic face types, labeled “Soft”, “Hermaphrodite”, “Muted”, “Expressive”, “High-contrast”, “Weathered”, “Classic-feminine”, “Handsome”, “Determined”, and “Massive”.

The first holistic face type, “*Soft*”, comprises 17 of the 160 faces. Except for one, all faces in this cluster belong to females. Factors that differentiate this holistic type from other include pronounced eyelashes, soft face outline, full and colorful lips (i.e., lip sensuality and conspicuity), eyebrow shape (i.e., curved), symmetry, skin naturalness, femininity and babyface. Overall, the Soft type can be classified with a smooth skin. Further, the cluster consists of below-average ratings on age-specific factors, color contrast (i.e., high on naturalness), ear appearance, gender specific hair, forehead appearance, skin composition (i.e., high purity) and cheekbone appearance (i.e., high on conspicuity). A soft face outline, full lips and skin naturalness are indicators of a babyface and agree on other factors presented in section 2.2.2. However, the babylike features are muted through prominent cheekbones and a below-average rating on forehead appearance which is usually one important babyish feature. Overall, these factors capture broader groupings of facial elements that characterize the holistic face type as one that can be best described as soft, natural or babyish.

The second cluster, “*Hermaphrodite*” faces (i.e., faces with dominant feminine and soft masculine features), comprises 23 faces, majority males (N = 15). Differentiating factors include above-average ear appearance, lip fullness, nose size, hair fullness and masculinity. Other differentiating facial feature factors include below-average age-specific factor, nose appearance, skin color composition (i.e., high on lightness), gender specific hair, lip color and eyebrow shape (i.e., not round but straight). Overall, this prototypical holistic face type can be described as strong, dominant feminine and natural soft masculine.

The third cluster, “*Muted*”, is the smallest group in the sample, comprising 4 faces (three female and one male) and is differentiated by a general lack of prominent features. Differentiating factors include above-average color contrast (i.e., low on naturalness), eyebrow shape (i.e., curved), symmetry and cheekbone’s appearance (i.e., low on conspicuity). Below-average nose appearance, skin color composition (i.e., high on lightness), ear appearance, lip fullness, eyebrow appearance, eyes prominence, forehead appearance, nose size, hair fullness, skin composition (i.e., high purity) and proportion upper/lower lip differentiate this face type

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from others. Overall, this prototypical holistic face type can be described as high in contrast (facial features such as eyes, nose, lips are not prominent but high in color contrast) and non distinctive in gender.

The fourth cluster, “*Expressive*”, comprises 17 faces (only female, mid-aged). Prominent within this holistic face type is the multitude of outstanding facial characteristics. Factors differentiating this holistic cluster from others include above-average eyelashes appearance, face outline and fullness, ear appearance, lip fullness, eyebrow appearance, position, eyes prominence, lip color (i.e., conspicuity), hair fullness, eyebrow-shape (i.e., curved) and femininity. Further, the cluster consists of below-average ratings on skin color composition (i.e., high on lightness), color contrast (i.e., high on naturalness), gender specific hair, skin naturalness, masculinity and babyface. Overall, this holistic face type can be described as expressive, strong or intense.

The fifth cluster, “*High-contrast*”, comprises 15 faces (only one male) and achieves differentiation through darker complexion, pronounced forehead, and irregular skin. Specifically, differentiation is achieved through above-average eyelashes appearance, face outline and fullness, age-specific factor, skin color composition (i.e., low on lightness), forehead appearance, lip color (i.e., conspicuity), skin composition (i.e., low on purity), eyebrow shape (i.e., curved), babyface and femininity. Below-averaged ratings are found for ear appearance, eyebrow appearance, gender specific hair and masculinity. Faces of this type can be described as contrasting, lively or vivid.

The sixth cluster, “*Weathered*”, comprises 17 faces (only 2 female). This cluster is formed based on above-average age-specific factor, ear appearance, forehead appearance, nose size, non-symmetry, skin composition (i.e., low purity), disproportionally larger upper or lower lip and cheekbone’s appearance (i.e., low on conspicuity). Below-average ratings on color contrast (i.e., high on naturalness), lip fullness, eyebrow appearance, gender specific hair, position, eyes prominence, lip color, hair fullness, eyebrow shape (i.e., straight), skin naturalness and femininity differentiate this face type from others. Overall, this prototypical holistic face type can be described as resistant, tough and rugged.

The seventh cluster, “*Classic-feminine*” comprises 16 faces (all female). Facial feature factors that differentiate this holistic face type from other include above-average eyelashes

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appearance, face outline and fullness, color contrast (i.e., high), eyes prominence, symmetric, lip color (i.e., conspicuity), hair fullness, proportion upper/lower lip, eyebrow shape (i.e., curved), skin naturalness and highest rating on femininity. Further, the cluster consists of below-average ratings on age-specific factors, nose appearance, skin color composition (i.e., high on lightness), ear appearance, eyebrow appearance, gender specific hair, skin composition (i.e., high on purity), cheekbone's appearance (i.e., high on conspicuity) and masculinity. Faces of this type can be described as highly feminine, natural, gracile and delicate.





















The eighth cluster, "*Handsome*", is the largest group in the sample comprising 27 faces (all male). Differentiating factors include above-average eyelashes appearance, skin color composition (i.e., low on lightness), ear appearance, lip fullness, eyebrow appearance, gender specific hair, eyes prominence, non symmetric and highest rating on masculinity. Other differentiating facial feature factors include below-average color contrast (i.e. high on naturalness), eyebrow shape (i.e., straight), babyface and femininity. Overall, this prototypical holistic face type can be described as young, highly masculine, dynamic, handsome and sensual.

The ninth cluster "*Determined*" comprises 9 faces (only one female, mid-aged). Factors differentiating this holistic cluster from others include above-average on face outline and fullness, age-specific factors, ear and eyebrow appearance, position, forehead appearance, non symmetric, skin composition (i.e., low on lightness), eyebrow shape (i.e., curved) and masculinity. Below ratings on color contrast (i.e., high on naturalness), lip fullness, nose size, lip color, hair fullness, babyface and femininity differentiate this face type from others. Overall, this holistic face type can be described as determinant and strong.

The final cluster, "*Massive*", comprises 14 faces (all male, higher age). This cluster is formed based on above-average age-specific factor, skin color composition (i.e., low on lightness), ear and eyebrow appearance, gender specific hair, forehead appearance, nose size, skin composition (i.e., low on purity), proportion upper/lower lip, and highest rating on masculinity. Differentiating factors include below-average color contrast (i.e., high on naturalness), skin naturalness, lip color, hair fullness, babyface and femininity. Faces of this type can be described as highly masculine and rugged. Examples of these ten holistic face types are given in table 12.

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Table 12: Examples of Holistic Face Types

<i>Holistic Face Types (N=10)</i>									
<i>Soft I (N=17)</i>	<i>Hermaphrodite II (N=23)</i>	<i>Muted III (N=4)</i>	<i>Expressive IV (N=17)</i>	<i>High-Contrast V (N=15)</i>	<i>Weathered VI (N=17)</i>	<i>Classic-Feminine VII (N=16)</i>	<i>Handsome VIII (N=27)</i>	<i>Determined IX (N=10)</i>	<i>Massive X (N=14)</i>
									
									

Source: author's calculation

Overall, Study I provides support for the notion that holistic types of faces emerge from unique combinations of anatomical features and, therefore, follows the gestalt tradition of holistic perception (e.g., Tanaka and Sengco 1997). Study I also amplifies prior research, which has developed human face types only on the basis of attractiveness and selected facial features. The results are in line with previous research on face types related to age (Guthrie 1976), grooming and expression (Cunningham et al. 1995). Furthermore, they show analogous results to earlier identified face types such as babyfaces, feminine and masculine faces with their facial features (see section 2.2 for a review). For example, the soft face type was described through a soft face outline and a smooth skin. Below-average ratings on age-specific features were other indicators of this face type - all facial elements that were already found in case of babyfaced individuals. The classic feminine face type, for example, was associated with highly feminine facial factors including eye prominence and above-average eyelashes appearance, a soft face outline, a conspicuous lips color, and hair fullness as identified in other studies (Little, Burt, and Perrett 2006).

In summary, the categorization presented in this research relies on a comprehensive list of anatomical features and attempt to establish a taxonomy of human faces. Yet, Study I does not shed light on generic personality inferences that consumers may derive from human faces: this was the rationale for conducting Study II.

4.2 Study II: Personality Trait Inferences from Holistic Face Types

4.2.1 Objectives

While Study I identified ten holistic face types, Study II extends it in so far that it investigates the personality trait impressions that consumers infer from holistic types of faces. In particular, Study II aims at establishing systematic relationships between holistic face types and specific personality dimensions by:

- (1) assessing consumer personality impressions evoked by holistic face types, and
- (2) linking expert-based holistic face types with consumer personality impressions to identify systematic relations.

Table 13 summarizes important details of Study II.

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Table 13: Overview of Empirical Study II

	Study I	Study II	Study III	Study IV	Study V
Objective	<i>Holistic Face Types</i>	<i>Personality Trait Inferences from Holistic Face Types</i>	Testing the <i>Assimilation Boost Effect</i> : presenting brands side by side with matching faces enhances brand personality inferences; Testing alternative explanations	Testing the <i>Contrast Boost Effect</i> : presenting first the mismatching face and then the brand enhances brand personality inferences; Testing alternative explanations	<i>Neural Correlates of the Boost Effects</i>
Method	Psychological measurement (expert ratings; N=60)	Psychological measurement (student sample; N=165)	Psychological measurement (student sample; N=160 pretest, N=369 main study)	Psychological measurement (student sample; N=120)	Behavioral and functional neuro-imaging experiment (student sample; N=22)
Mode of Exposure	Faces in isolation	Faces in isolation	Simultaneous presentation of faces and brands	Sequential presentation of faces and brands	Simultaneous and sequential presentation of faces and brands
Key Findings	Identification of ten <i>Holistic Face Types</i>				

Source: author's own composition

4.2.2 Theoretical Background

Social and consumer research both document a variety of viewer responses to entire faces and single features (Guido 1995), converging on the finding that personality trait inferences based on visual appearance are generally accurate (e.g., Little and Perrett 2007). For example, consumers perceive large-eyed models as more agreeable, extravert, and empathic (Paunonen et al. 1999) and they judge individuals with babyish faces to be honest, warm, naïve, and kind (Berry and McArthur 1985; Zebrowitz and Montepare 1992; Masip, Garrido, and Herrero 2004) (see section 2.2 for a review).

In line with the holistic perspective, viewers reliably infer personality traits after even very brief exposure times (Willis and Todorov 2006). Prior research also found that viewers not only infer personality from faces but also extend these personality inferences to brands (Petroshius and Crocker 1989). In particular, recent research established the notion that human faces assist in developing stronger brands by distinguishing them from competing offerings and by evoking favorable impressions among consumers (Till and Busler 2000; Johar, Sengupta, and Aaker 2005; Thomson 2006). However, despite substantial support for personality trait inferences from faces, only fragmented evidence shows systematic links

between holistic face types and personality traits resulting from them. Given the high relevance in both practice and academia of using endorser faces for brand differentiation, this research gap is surprising and needs closing before investigators can examine the mechanisms for face-to-brand personality trait inferences in greater detail.

4.2.3 Method

A survey was conducted to obtain data and evidence that would help accomplish the goal of the Study II. Participants were one hundred and sixty five students ($M_{\text{age}} = 26.1$ years, 49% females) at a large public university who participated in the current study. Caucasian students were selected as participants, to exclude the influence of other and potentially distorting factors (i.e., culture, education, age, etc.) (Kahle, Beatty, and Homer 1986; Kahle and Kennedy 1988). To avoid gender bias, each face contained approximately an equal number of male and female ratings. Participants were asked to complete a self-administered, one-page questionnaire on a voluntary basis. The questionnaire took approximately 20 minutes to complete (see appendix C for the questionnaire). For participation, students received incentives in the form of German chocolate after they completed the questionnaire.

Using a paper questionnaire, participants rated ten randomly assigned faces (five male and five female faces) on 15 personality characteristics and on likeability. This approach generated a total of 29,700 individual ratings. As done in Study I, data in Study II was analyzed at the stimulus level with responses averaged for each face on a specific personality trait.

To assess *personality trait inferences*, the multi-item battery developed by Aaker (1997) was employed. This scale was particularly used because brand personality has gained a lot of attention in research and marketing practise. Studies found that brand personality plays a significant role in consumers' lives and influences consumer attitudes. Specifically, consumers use brand personality to express themselves. Students were asked to evaluate the faces according to all personality traits on a five-point Likert scale with 1=strongly agree and 5=strongly disagree. The statement given to the students in the questionnaire read: "The person behind this face seems very... (personality trait)". The fifteen items describing personality traits completed the phrases. Previous empirical research showed that these items have loaded onto five personality dimensions (e.g., Aaker 1997; Orth and Malkewitz 2008; Yorkston, Nunes, and Matta 2010): sincerity (down-to-earth, honest, wholesome, and cheerful), excitement (daring, spirited, imaginative, and contemporary), competence (reliable,

intelligent, and successful), sophistication (classy and charming) and ruggedness (outdoorsy and rugged). To assess *face likeability*, a three 7-point semantic differential scale of Kamp and MacInnes (1995) was used.

To test the adequacy of the original five-factor measurement model, a confirmatory factor analysis (CFA) using AMOS 6.0 and SPSS 14 was employed. CFA is described as a multivariate statistical technique, which aims to find out the latent structure of a variable set by reducing the large number of variables to a smaller number of factors (Backhaus et al. 2000). CFA is used when variables of each latent construct (factor) are already defined by pre-established theory, and thus, the variables describing each factor only need to be specified.











4.2.4 Results

Confirmatory factor analysis of the personality traits indicated that the five-factor solution had a significantly lower chi-square and significantly better fit statistics than alternative three-, four-, or six factor solutions, and therefore indicated an acceptable fit of the model. All factor loadings exceeded .70 except for the items “down-to-earth” and “successful” which were marginally below the threshold level. After removing these items the model fit improved to CFI =.83. Compatible with Aaker’s (1997) results, the remaining items loaded onto the constructs sincerity (honest, wholesome, cheerful), excitement (daring, spirited, imaginative, contemporary), competence (reliable, intelligence), sophistication (class, charm), and ruggedness (outdoorsy, tough). Table 14 shows the CFA results and illustrates descriptives using example faces including the holistic face type cluster.

Consistent with their application, the likeability scale items loaded strongly ($IFC \geq .88$) on a single factor with a high model fit $GFI > .90$. The items were subsequently averaged to form a single measure ($\alpha = .88$).

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Table 14: CFA Results for Personality Trait

Factor	Item	Loading	M (SD)	Low	Example (Holistic Face Type)	High	Example (Holistic Face Type)
Sincerity	honest	.51	2.82 (.80)	3.60		2.20	
	wholesome	.69					
	cheerful	.74					
Excitement	daring	.65	3.12 (.86)	4.11		2.03	
	spirited	.85					
	imaginative	.62					
	up-to-date	.64					
Competence	reliable	.83	2.73 (.95)	3.73		1.75	
	intelligence	.85					
Sophistication	upper class	.72	3.38 (1.00)	4.50		1.75	
	charming	.84					
Ruggedness	outdoorsy	.89	2.75 (.98)	3.30		2.75	
	tough	.74					

GFI = .86; CFI = .83;
NFI = .82

Source: author's calculation

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Further, analyses were conducted at the stimulus level in order to demonstrate relationships between holistic face types and personality trait inferences (Henderson, Giese and Cote 2004). To obtain a score for each face on a specific variable individual ratings of a face were averaged again (i.e., consumer responses). To show that holistic face types are associated with generalizable responses, a personality by holistic face type analysis of variance was performed. Differences in personality impressions were significant for all holistic face types. To determine what cluster-specific personality scores were significantly smaller or greater than the mean score across all clusters t-tests were performed (see table 15).

Soft faces scored high on sincerity, excitement, sophistication, and low on ruggedness. *Hermaphrodite* faces generated mostly average impressions except for low scores on competence. *Muted* faces scored low on sincerity and sophistication and high on competence and ruggedness. *Expressive* face types scored high on sincerity, competence, and sophistication. *High-contrast* face types were associated with competence and scored low on ruggedness. *Weathered* face types scored high on competence, and low on sophistication, sincerity, and excitement. *Classic-feminine* faces generated impressions of sincerity, excitement, competence, sophistication, and scored low on ruggedness. *Handsome* faces were perceived as sincere, exciting, and rugged and scored low on competence. *Determined* faces were associated with competence and scored low on sincerity, excitement, and sophistication and *massive* faces related to stronger impressions of ruggedness and scored low on sincerity, excitement, competence, and sophistication.

Likeability ratings further showed that *soft*, *expressive*, and *classic feminine* face types generated impressions of high likeability. Whereas other face types such as *hermaphrodite*, *muted*, *weathered*, *determined*, and *massive* scored low on likeability.

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Table 15: Relationships between Holistic Face Types and Personality Dimensions

	<i>Holistic Face Type (N=10)</i>										<i>Sample Mean</i>	<i>p</i>
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>	<i>VII</i>	<i>VIII</i>	<i>IX</i>	<i>X</i>		
<i>Face Personality Dimension</i>	<i>Soft (N=17)</i>	<i>Herma-phrodite (N=23)</i>	<i>Muted (N=4)</i>	<i>Expressive (N=17)</i>	<i>High-contrast (N=15)</i>	<i>Weathered (N=17)</i>	<i>Classic-feminine (N=16)</i>	<i>Hand-some (N=27)</i>	<i>Deter-mined (N=10)</i>	<i>Massive (N=14)</i>	<i>Sample Mean</i>	<i>p</i>
Sincerity	2.68^a	2.87	3.00^{ab}	2.67^{bc}	2.83	3.17^{abcd}	2.61^{bde}	2.70^{bdf}	3.10^{acef}	3.00^{acef}	2.83	.001
Excitement	2.97^a	3.17	3.34	3.04	3.27	3.68^{ab}	2.97^{bc}	2.87^{bd}	3.57^{acd}	3.34^{abcd}	3.17	.001
Competence	2.79	2.87^a	2.60^b	2.49^{ac}	2.60^d	2.50^{ae}	2.55^{af}	3.14^{abcefg}	2.57^{agh}	2.81^{bcefg}	2.73	.001
Sophistication	3.11^a	3.58	3.77^{ab}	3.13^{bc}	3.45	3.80^{acd}	2.95^{bde}	3.25	3.65^{ace}	3.67^{ace}	3.38	.001
Ruggedness	2.91^a	2.84	2.57^{ab}	2.77	2.92^{bc}	2.71	3.02^{bd}	2.42^{acd}	2.74	2.40^{acd}	2.75	.001
Likeability	3.60^a	4.17^{ab}	4.19^{ac}	3.69^{bcd}	3.93	4.45^{abcde}	3.41^{bcef}	3.81	4.32^{adf}	4.14^{adef}	3.93	.001

Notes: Values in bold distinguish the cluster in terms of emphasizing that dimension score to be significantly ($p < .05$) greater or smaller than the sample mean. Within each dimension, identical superscripts identify pairs of faces that score significantly ($p < .05$) different on this factor on the basis of a Schéffe's post hoc test.

Low ratings are associated with higher personality and likeability ratings.

Source: author's calculation

4.2.5 Discussion

Taken together, these findings suggest that holistic types of faces differentially relate to distinct personality trait impressions. The systematic relationships between face types and personality traits follow an interesting pattern: Face types that have highly feminine (or in some cases babyish) facial factors elicit favorable ratings on sincerity, excitement, sophistication, competence (above-average) and score low on ruggedness (i.e., soft, classic-feminine, and expressive). These results indicate the influence of babyish features that are generally associated with positive personality traits except than competence. In agreement with prior research, soft face types with several babyish features were not perceived competent. Quite low scores on specific personality traits were assigned to weathered, massive, and determined face types. However, these face types were basically described through more rugged, tough, and determined facial features (mostly men) that might also explain the highest ratings on ruggedness. The relationship between masculinity and ruggedness seems intuitive and was already suggested by Paunonen et al. (1999, p. 558) claiming “a square jaw signifies physical strength and masculinity, which, in turn, implies interpersonal independence”. Moreover, Perrett et al. (1998) found that enhancing masculine facial elements increased both perceived dominance and negative trait inferences. Weathered and determined face types elicited high ratings on competence. Handsome and muted face types have more positive personality evaluations whereas hermaphrodite and high-contrast face types are more average ranked. These findings suggest a relationship between gender and perceived personality inferences, especially in case of ruggedness and sophistication. Face types including mainly females and feminine features (i.e., soft, expressive, classic-feminine) were evaluated as highly sophisticated whereas the muted, weathered, determined and massive face type (mainly males) elicited low ratings on sophistication. Ruggedness scores were the other way around. These relations might be transferred to the brand personality concept and clearly challenge the finding of Grohmann (2009, p. 116) who argued masculine and feminine brand personality “are distinct from Aaker’s (1997) ruggedness and sophistication dimensions, [...]. They complement and can be used in conjunction with Aaker’s (1997) five dimensions of brand personality”.

Further, results clearly indicate that positively evaluated personality traits (i.e., above-average) were more liked than negative evaluated personality traits (i.e., below-average). For example, the soft, expressive, and classic feminine face type were perceived highly sincere,

exciting, sophisticated, and competent – depending on the face type. Two of these face types further elicited below-average ratings on ruggedness. However, the results for face types that are less liked do not follow the same pattern: Consumers assigned lower likeability ratings to face types that scored high and low on competence. Further, low likeability ratings were generally found for face types that exhibited below-average ratings on sincerity, sophistication, and excitement except than ruggedness. Highly rugged face types generated low scores of likeability. However, results indicate that high competent face types were disliked only when all other personality traits were negatively rated (i.e., below-average). This suggests that sincerity, sophistication, excitement have a higher relevance than competency inferred from face types for likeability ratings.

The author has to note that participants had to rate personality traits first followed by ratings of likeability. This might exclude the influence of liking on personality traits; however in these kinds of studies, the automaticity and spontaneous formation of attractiveness or liking evaluation can not be directly controlled.

In sum, the finding of systematic differences in how holistic face types relate to personality impressions has two important implications. First, insights into these links may enable brand managers to seek and employ human faces for better positioning and differentiating their brands more systematically. Second, establishing personality trait impressions associated with specific face types provide the desired basis for testing the hypothesized effects of matching and mismatching faces and brands in the subsequent studies.

4.3 Study III and IV: The Assimilation and the Contrast Boost Effect

4.3.1 Objectives

Study III tests the assimilation boost effect hypothesis (hypothesis 1), which claims that brand personality inferences will be boosted when face and brand match rather than mismatch on personality traits under the condition of simultaneous presentation. Study IV tests the contrast boost effect, specifically hypothesis 2, which predicts that brand personality inferences will be boosted when face and brand personality mismatch rather than match under conditions of sequential exposure. Additionally, alternative explanations for the boost effects were investigated by testing the moderating role of face attractiveness, emotional attachment to the brand, and perceived self-similarity. Due to their relevance for endorsement effectiveness, these variables were included as boundary conditions of the boost effects (see section 3.2.4).

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Boost effects and hypotheses are presented in the upcoming section 4.3.2. Table 16 summarizes important details of Study III and IV.

Table 16: Overview of Empirical Study III and IV

	Study I	Study II	Study III	Study IV	Study V
Objective	<i>Holistic Face Types</i>	<i>Personality Trait Inferences from Holistic Face Types</i>	Testing the <i>Assimilation Boost Effect</i> : presenting brands side by side with matching faces enhances brand personality inferences; Testing alternative explanations	Testing the <i>Contrast Boost Effect</i> : presenting first the mismatching face and then the brand enhances brand personality inferences; Testing alternative explanations	<i>Neural Correlates of the Boost Effects</i>
Method	Psychological measurement (expert ratings; N=60)	Psychological measurement (student sample; N=165)	Psychological measurement (student sample; N=160 pretest, N=369 main study)	Psychological measurement (student sample; N=120)	Behavioral and functional neuroimaging experiment (student sample; N=22)
Mode of Exposure	Faces in isolation	Faces in isolation	Simultaneous presentation of faces and brands	Sequential presentation of faces and brands	Simultaneous and sequential presentation of faces and brands
Key Findings	Identification of <i>Holistic Face Types</i>	Systematic Relationships between <i>Holistic Face Types</i> and strategically valuable <i>Personality Traits</i>			

Source: author's own composition

4.3.2 Theoretical Background

Advertising research offers some insight into the effectiveness of endorser faces (see section 3.2 for a review). Studies in this area have mainly focused on effects of physical attractiveness, expertise, and celebrity credibility on consumer responses (e.g., Ohanian 1990; Solomon, Ashmore, and Longo 1992; Till and Busler 2000). A key finding is the importance of a match (or mismatch, respectively) between the endorser and the endorsed target on salient dimensions (e.g., attractiveness). According to this “match-up hypothesis” (Kahle and Homer 1985), endorser attractiveness, expertise, and credibility differentially impact

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consumer attitudes and intentions (e.g., Kamins 1990; Solomon, Ashmore, and Longo 1992; Till and Busler 2000).

Following this “match-up hypothesis” (Kahle and Homer 1985), it is expected that the match between a face and a brand on salient personality traits (i.e., those relevant for consumers’ brand perception and buying behavior) will play a significant role in boosting personality inferences. This notion can be based on match-up theory, which would predict that viewing a face and a brand that match on a target personality trait enhances impressions on that dimension. The author refers to this phenomenon as *boost effect* and defines it as an enhancement of personality trait inferences facilitated by combinations of matching (assimilation effect) or mismatching (contrast effect) pairs of faces and brands.

Priming theories, more specifically, context research sheds more light on the aforementioned mechanisms underlying these effects, including the seemingly opposing predictions. First, the *assimilation boost effect hypothesis* postulates that contextual cues that increase the accessibility of a concept (i.e., personality) result in information being processed in a manner consistent with this concept (Johar, Moreau, and Schwarz 2003). This mechanism results in an assimilation effect of subsequent responses; that is, responses are closer to the implications of the contextual prime than would otherwise be the case. For example, studies on face processing (Dwyer and Vladeanu 2009) and product evaluation (Tanner 2008) indicate assimilation effects when stimuli are *more rather than less similar*. Extending assimilation effects to the present context would imply that a greater match (i.e. similarity) between face-based and brand-based personality traits enhances or boosts personality trait inferences, as consumers assimilate face-based impressions into brand impressions.

However, a second prediction finds support in the literature and stands opposite to the assimilation boost effect: the *contrast boost effect hypothesis*. According to this idea, contextual cues that increase the accessibility of a concept evoke responses more distant to the implications of the contextual prime when stimuli are *less rather than more similar*. Prior studies report contrast effects for faces (Ruys et al. 2006), comparison of foods (Tanner 2008), social appearances (Förster, Liberman, and Kuschel 2008), categories (Queller, Mason, and Schell 2006), and product perceptions (Lee and Suk 2010; Shen, Jiang, and Adaval 2010). According to the contrast effect hypothesis, viewing a face and a brand that *mismatch* on a target personality trait should enhance inferences on that trait for the brand.

To reconcile these two opposing perspectives on brand personality inferences from faces, the author proposes that assimilation versus contrast effects depend on the modes of exposure. The author bases this prediction on the inclusion-exclusion account (Schwarz and Bless 1992)

and on the global versus local processing style model (Förster, Liberman and Kuschel 2008), which evolved from the former. Both models propose that when information is included into a category (e.g., through simultaneous display), assimilation occurs, whereas when information is excluded from a category (e.g., through sequential display), contrast occurs (Stapel and Winkielman 1998). For example, Tanner (2008) found such contrast effects when viewers judged products in separate evaluation and found assimilation effects when products were judged jointly. The author builds on this work here and bases her predictions on assimilation-contrast theory.

In summary, consumers may use different mechanisms to create or update brand personality impressions in a dynamic process depending on which traits are currently accessible in memory (Moreau and Schwarz 2003; Johar, Sengupta, and Aaker 2005). The author expects that the distinct personality impression elicited by a human face will likely represent highly accessible reference points against which consumers will judge endorsed brands. Presenting a face and a brand with matching personalities *simultaneously* should trigger assimilation. Presenting them *sequentially* (i.e., the face first and then the brand), however, should give rise to the contrast effect and lead to a boost in trait inferences when face and brand personality *mismatch*. The author hypothesizes:

H1: When consumers view the face and the brand *simultaneously*, brand personality inferences will be stronger when face and brand personality *match* (assimilation boost effect).

H2: When consumers view face and the brand *sequentially* (i.e., the face first and then the brand), brand personality inferences will be stronger when face and brand personality *mismatch* (contrast boost effect).

Alternative Explanations

Despite the author's reasoning that personality inferences will depend on the match (or mismatch, respectively) between face and brand as well as the mode of exposure, it could be argued that the boost effects are at least partially influenced by alternative mechanisms, such as the attractiveness of the face, consumers' emotional attachment to the brand, or endorser-self-similarity. These variables have received considerable attention in extant research (Zebrowitz et al. 2003); yet, prior findings for some of these mechanisms have not been consistent (Silvera and Austad 2004; Trampe, Stapel, and Siero 2007).

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Face attractiveness. Two opposing streams of research discuss the impact of the attractiveness of the endorser's face on brands. First, one line of work posits that humans often associate attractive people with positive traits (Zebrowitz et al. 2003) and that attractive endorsers often have a positive effect on consumer responses to advertised brands (Kahle and Homer 1985; Kamins 1990). Additionally, it is argued that attractive faces may provide cues for assessing personality more accurately (Little and Perrett 2007). Within this stream of investigation, some researchers argue that face attractiveness may not directly influence brand evaluations (Caballero, Lumpkin, and Madden 1989). Instead, face attractiveness may work as a moderator; for example, by enhancing the effect of endorser expertise on brand evaluations (Till and Busler 2000). In the context of the present empirical study, this stream of work implies that brand personality impressions would be more pronounced for matching faces and brands when face attractiveness is high.

However, a second line of research has documented negative effects as a consequence of exposure to highly attractive endorsers (Stice, Spangler, and Agras 2001; Halliwell and Ditmar 2004), which may reduce advertising effectiveness (Bower 2001). According to this research, face attractiveness would mute or at least weaken the boost effects when endorser faces are highly attractive. This conclusion stands in opposition to the former body of work that advocates a positive role of face attractiveness and hypothesis 2.

Emotional Attachment to the Brand. Another potentially alternative mechanism for boosting brand personality inferences could be consumers' attachment to the brand, which captures an emotional bond between an individual and a brand that predicts commitment (Bergami and Bagozzi 2000). Emotional attachment to a brand indicates relationship quality (Thomson 2006): strongly attached individuals perceive the relationship with the brand as more differentiated and, in some cases, even irreplaceable (Thomson, MacInnis, and Park 2005). As a consequence, strong emotional attachment to a brand reduces the likelihood of consumer defection (Liljander and Strandvik 1995). All this implies that a strong link between consumer and brand works as a buffer against possible negative impressions consumers may infer from endorsers, which could lead consumers to potentially disregard mismatching impressions. In fact, as emotional attachment to a brand increases, consumers' forgiveness for negative information has been shown to increase as well (Ahluwalia, Unnava, and Burnkrant 2001). Following this line of thought, high emotional attachment would further increase the assimilation boost effect and might increase as well as decrease the contrast boost effect (depending on willingness to forgive), because consumers may

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experience a mismatch between face-evoked and brand-based personality impressions as negative information.

Self-similarity. Similarity between endorser and self could present a third alternative mechanism to boosting brand personality inferences because humans continuously compare themselves with others (Kruglanski and Maysseles 1990) and are more likely to consider information from their counterparts when self-similarity is high (e.g., Blanton, Crocker, and Miller 2000). In line with this notion, endorsers should be more effective in enhancing brand personality impressions when there is greater perceived similarity between the endorser's and the consumer's own face (Silvera and Austad 2004; see section 3.2.4.3 for a review). For example, DeBruine (2002) shows that self-similarity enhances judgments of personality traits such as competence, trustworthiness, and sincerity. Additionally, the ability of self-similarity to enhance personality judgments and to inhibit negative impressions (Blanton, Crocker, and Miller 2000) would also imply that greater self-similarity is associated with stronger boost effects. Yet, in contrast to this conclusion stands evidence that social comparison can work in both directions; that is, self-evaluations are sometimes assimilated toward and sometimes contrasted away from a given reference point, depending on psychological closeness or comparison mechanisms (Brown et al. 1992; Mussweiler, Rueter, and Epstude 2004; Trampe, Stapel, and Siero 2007). For example, Bower (2001) reports that if sufficient negative affect, such as feelings of inadequacy, is generated as a result of comparison with the endorser, evaluations of both the endorser and the brand may be affected adversely. This line of work would imply weaker boost effects. In summary, contradicting evidence exists for how self-similarity impacts brand personality inferences.

4.3.3 Study III: The Assimilation Boost Effect

4.3.3.1 Method

Study III tests the assimilation boost effect and the hypothesis that brand personality impressions will be boosted when face and brand personality match rather than mismatch on a target dimension under conditions of joint exposure. Further, boundary conditions for this baseline effect were investigated by testing the moderating effects of face attractiveness, brand attachment, and self-similarity. Generally, “a moderator is a [...] variable that affects the direction and/or strength of the relation between an independent or predictor variable and

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a dependent or criterion variable [...]. In the more familiar analysis of variance (ANOVA) terms, a basic moderator effect can be represented as an interaction between a focal independent variable and a factor that specifies the appropriate conditions for its operation” (Baron and Kenny 1986, p. 1174). Selected stimuli are employed in both studies and are presented next including pre-test results.


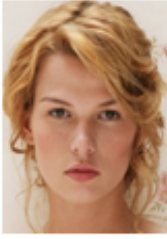


Stimuli Selection

In line with previous studies (Johar, Sengupta, and Aaker 2005), three brands were chosen – Nivea, Red Bull, and Bayer – because they scored the highest on traits that apply to both human and brands (Batra and Homer 2004). Specifically, a 4 (face: female vs. male) × 3 (brand: Nivea vs. RedBull vs. Aspirin) × 3 (personality trait: sophistication vs. excitement vs. competence) full factorial design to test these relationships were employed. Given the potential influences of self-similarity, emotional attachment to the brand, and perceived attractiveness, the author decided to employ both male and female faces. The use of unfamiliar faces represents a key advantage with respect to experimental control. The employment of familiar faces or celebrities might lead to significant variations in participants’ attitudes that are usually formed by rumors and media.

As indicated in Study II, a large variation on those personality dimensions between face types but only minimal correlations was found, and from a practical point of view, marketers position numerous brands across many categories along those dimensions. The author selected faces tested in Study II that exhibited highest scores on the selected personality dimensions across all identified holistic face types. Based on the findings presented in table 13, the author decided to include faces that belong to the weathered, classic-feminine, and handsome holistic face types. These holistic face types elicited highest ratings on competence (Weathered face type), sophistication (Classic-feminine face type), and excitement (Handsome face type). One male was further added to test for gender effects (Hermaphrodite face type). Further, a pre-test was conducted confirming earlier findings. Table 17 presents the faces selected for the empirical studies III-V. Faces of these holistic face type categories were chosen that again scored either very low or very high on sophistication ($M_{\text{high}} = 1.75$ and $M_{\text{low}} = 4.65$), excitement ($M_{\text{high}} = 2.03$ and $M_{\text{low}} = 4.25$), and competence ($M_{\text{high}} = 2.16$ and $M_{\text{low}} = 3.50$).

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Table 17: Selected Faces for Studies III-V

				
Excitement	3.75 ^{abcd} (0.81)	2.16 ^{abd} (0.26)	2.03 ^{acd} (0.45)	4.25 ^{abcd} (0.44)
Sophistication	3.96 ^{abcd} (0.92)	1.75 ^{abcd} (0.53)	2.31 ^{abcd} (0.92)	4.65 ^{abcd} (0.41)
Competence	2.16 ^{abcd} (0.58)	3.50 ^{abd} (0.80)	3.25 ^{abc} (0.88)	3.20 ^{abd} (0.91)
Holistic Face Type	<i>Weathered</i>	<i>Classic-feminine</i>	<i>Handsome</i>	<i>Herma-phrodite</i>




Notes: Low ratings are associated with higher personality perception. Superscripts a, b, c, and d indicate that pairs of mean values are different ($p < .05$) in magnitude based on Schéffe's pairwise method was applied for all mean comparisons.

Source: author's own calculation

Pretest. For the selection of brands, a controlled-association test was conducted that generated an initial list of brands consumers associate with a specific personality dimension (Greenwald et al. 2009). Participants were 160 students ($M_{\text{age}} = 26.1$ years, 49% females; sample of Study I), who wrote down the first five brand names, products or categories that came to their mind upon viewing a specific face (see appendix C for the questionnaire). The most frequently named categories were selected and included body care (38%), food and beverages (24%), apparel (16%), sporting goods (14%), and pharmaceuticals (8%). Based upon these results, a list of fourteen brands listed under those categories was compiled, with a bias towards unisex products by eliminating brands listed under multiple traits and those exhibiting low levels of familiarity. A second group of twelve consumers rated these brands on sophistication, excitement, and competence, using Aaker's (1997) seven-point Likert-type scale. Three brands consistently elicited very high scores on one of the three dimensions and were selected for the main study (see table 18 for brands and brand personality ratings). These brands include Nivea as a sophisticated brand ($M = 1.43$), Red Bull as an exciting brand ($M = 2.59$), and Aspirin as a competent brand ($M = 1.91$).

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Table 18: Selected Brands for Studies III-IV

			
Excitement	4.03 ^{abc} (0.48)	2.59 ^{abc} (0.80)	5.67 ^{abc} (0.56)
Sophistication	1.43 ^{abc} (0.70)	3.33 ^{abc} (1.24)	2.55 ^{abc} (0.87)
Competence	2.03 ^{ab} (0.69)	2.93 ^{abc} (1.00)	1.91 ^{abc} (0.63)

Notes: Low ratings are associated with higher brand personality perception. Superscripts a, b, c, and d indicate that pairs of mean values are different ($p < .05$) in magnitude based on Schéffe's pairwise method applied for all mean comparisons.

Source: author's own calculation

To obtain pairs of matching and mismatching faces and brands, twelve combinations, six each for male and female faces were generated. For each gender, three combinations represented a match (e.g., sophisticated face x sophisticated brand) and another three combinations represented a mismatch (e.g., sophisticated face x unsophisticated brand). Such an advertisement, without explicit verbal statements about the connection between the endorser and the brand can be seen as an indirect persuasion attempt from the advertiser (McQuarrie and Phillips 2005) and was also used in the study of Batra and Homer (2004). The implicitness in this presentation form is often used in advertising, because many claims are likely to appear false or ridiculous if they are presented explicitly with verbal words (Messaris 1992; Messaris 1997). Research shows that visual language has a greater implicit syntax in comparison to verbal messages (e.g., Messaris 1997; Lister and Wells 2002; Kress and van Leeuwen 2004) and further, consumers spontaneously form multiple inferences when they are faced with image-based indirect advertising claims (McQuarrie and Phillips 2005).

Main Study. Participants in the main study were 369 students ($M_{age} = 22.2$ years, 55% females) of a large public university. Again, a 2 (match: match vs. mismatch) x 3 (personality trait: sophisticated vs. exciting vs. competent personality) x 4 (gender: male vs. female face) factorial design was employed, and participants according to their gender were randomly assigned to one of the six gender-specific face-brand combinations. Both stimuli were

visually paired. Verbal instructions required participants to think in general about personalities behind faces before they viewed both the face and the brand, which appeared simultaneously on a single slide. Participants then answered questions on brand personality, emotional attachment to the brand, face attractiveness, self-similarity, the perceived match, purchase intentions, face familiarity, and sociodemographics (see appendix D for the questionnaire).

Measures. A confirmatory factor analysis on Aaker's (1997) five-factor model for assessing personality traits indicated a satisfactory fit ($\chi^2(80) = 304.94, p < .001, CFI = .91$). Average variances extracted for all five traits equaled or exceeded .50, indicating acceptable convergent validity. Composite reliability measures were also acceptable ($CR > .82$).

The perceived match between face and brand was assessed using Till and Busler's (2000) three-item, seven-point scale, with items averaged to form a single index ($\alpha = .96, IFC > .95, EV = .92$). Finally, to assess purchase intention, Putrevu and Lord's (1994) scale was employed, with items rated on a seven-point scale. Consistent with the original application, scale items loaded strongly ($IFC > .87$) on a single factor, explaining 78% of the variance ($\alpha = .87$).

Potential moderator variables included (1) face attractiveness assessed through three items rated on a seven-point Likert scale (Ohanian 1990), which were subsequently averaged the items to form a single measure ($\alpha = .96, IFC > .89, EV = .92$); (2) consumers' emotional attachment to the brand assessed through Bergami and Bagozzi's (2000) three-item scale with items averaged to form a single reliable measure ($\alpha = .87, IFC > .81, EV = .81$); and (3) self-similarity, assessed through Bower and Landreth's (2001) three-item, seven-point Likert scale with items subsequently averaged into a single measure ($\alpha = .91, IFC > .92, EV = .85$).

4.3.3.2 Results

Manipulation Checks. An examination of the familiarity scores indicated that the faces were not familiar as intended ($M = 5.27, SD = 1.95$, from 1 = "Very familiar" to 7 = "Not at all familiar"). In contrast, participants did indicate familiarity with the brands ($M = 2.15$). To determine the success of the match manipulation, an ANOVA was employed with the manipulated match of the face-brand combination as the independent variable, and the perception of match by participants as dependent variable. The results showed a significant effect of the match manipulation on perceived match, with matching combinations resulting in a higher perceived match than mismatching combinations ($F(19,160) = 6.10, p < .01, M_{Match} = 3.77$ vs. $M_{Mismatch} = 5.47$). Neither brand ($F(2,366) = 1.24, p > .05$) nor gender

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($F(1,367) = .41, p > .05$) had a significant effect on perceived match but endorser face did ($F(3,365) = 28.61, p < .01$). In line with predictions, faces selected for their high scores on a specific trait elicited higher fit scores when they were matched with the corresponding brand. These findings constitute evidence that the manipulation of faces and brands was successful.

Testing the Assimilation Boost Effect. Hypothesis H1 predicted that a personality match between a face and a brand would boost trait impressions. To test this claim, three separate ANOVAs were conducted, one for each trait.

Results for the excitement dimension indicate a significant effect of match on excitement ($F_{\text{Red Bull}}(1,369) = 3.95, p < .05$). Specifically, consumers evaluated Red Bull as more exciting when the brand was paired with a more rather than less exciting face ($M_{\text{match}} = 2.88$ vs. $M_{\text{mismatch}} = 3.02, p < .05$).

Results for sophistication indicate a similar effect with brand personality boosted through a matching face ($F_{\text{Nivea}}(1, 369) = 3.89, p < .05$). Specifically, Nivea was perceived as more sophisticated when paired with a more rather than less sophisticated face ($M_{\text{match}} = 2.58$ vs. $M_{\text{mismatch}} = 2.94$).

Results for competence further corroborate the pattern of findings with a significant effect of match on competence ($F_{\text{Aspirin}}(1, 369) = 4.79, p < .05$). Specifically, Aspirin was perceived as more competent when paired with a matching rather than mismatching face ($M_{\text{match}} = 2.13$ vs. $M_{\text{mismatch}} = 2.74$). Taken together, these results support hypothesis 1.

Testing Alternative Explanations. To test the influence of face attractiveness as a possible moderator for the assimilation boost effect, another set of ANOVAs were performed. Results indicate a significant main effect of face attractiveness on excitement ($F(19,368) = 1.76, p < .05$), competence ($F(19,368) = 1.68, p < .05$), and sophistication ($F(19,368) = 1.03, p < .05$). However, the face attractiveness \times match interaction is significant only for excitement ($F(20,369) = 1.78, p < .05$), with participants rating brands as more exciting when paired with a matching attractive rather than mismatching attractive face ($M = 2.38$ vs. $M = 2.97$). These findings indicate that face attractiveness does not enhance the assimilation boost effect uniformly across brand personality dimensions.

Another set of ANOVAs aimed at investigating emotional attachment to the brand as a possible driver of the assimilation boost effect. Results indicate a significant main effect of attachment on excitement ($F(19,369) = 2.35, p < .001$), sophistication ($F(19,369) = 5.36, p < .001$), and competence ($F(19,369) = 5.52, p < .001$), with more attached consumers perceiving

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brands as more exciting ($M = 3.24$ vs. $M = 3.54$), more competent ($M = 2.45$ vs. $M = 3.00$), and more sophisticated ($M = 3.18$ vs. $M = 3.85$) than less attached consumers. The emotional attachment \times match interaction is also significant for sophistication ($F(19,368) = 2.87, p < .001$), competence ($F(19,368) = 2.30, p < .01$), and excitement ($F(19,368) = 1.67, p < .05$), with enhanced brand personality impressions under conditions of high attachment and matching rather than mismatching faces (excitement: $M = 3.44$ vs. $M = 3.84$; sophistication: $M = 3.27$ vs. $M = 3.60$; competence: $M = 2.46$ vs. $M = 2.94$). These findings indicate that emotional attachment to a brand further increases the assimilation boost effect.

A third set of ANOVAs aimed at testing self-similarity as yet another moderator variable for the assimilation boost effect. Results indicate a significant main effect of self-similarity on sophistication ($F(17,368) = 1.73, p < .05$). Yet, main effects of self-similarity were neither significant for competence ($F(17,368) = 1.04, p > .1$) nor excitement ($F(17,368) = 1.45, p > .1$). The self-similarity \times match interaction was significant for sophistication only ($F(17,368) = 1.27, p < .05$), with more self-similar faces perceived as more sophisticated than less self-similar faces ($M = 3.17$ vs. $M = 3.64$). Interaction effects were not significant for competence ($F(17,368) = 1.22, p > .1$) and excitement ($F(17,368) = .74, p > .1$). These findings indicate that self-similarity does not enhance the assimilation boost effect uniformly across personality traits.

Influence on Purchase Intentions. Given the well-established links between brand personality and purchase intentions (e.g., Batra, Lenk, and Wedel 2010; Johar, Sengupta, and Aaker 2005; Orth and Malkewitz 2008), the author examined whether or not the assimilation boost effect would extend to purchase intentions. The results of two ANOVAs indicate no significant main effect of match on purchase intentions ($F(19,368) = 1.12, p > .05$). However, the match \times personality interaction effects were significant for excitement ($F(19,368) = 1.70, p < .05$), competence ($F(14,368) = 3.00, p < .001$), and sophistication ($F(11,368) = 3.39, p < .001$), with stronger purchase intentions under conditions of a higher match on the target dimension (excitement: $M = 4.85$ vs. $M = 5.03$; sophistication: $M = 3.98$ vs. $M = 4.66$; competence: $M = 4.48$ vs. $M = 5.37$).

4.3.3.3 Discussion

Study III findings support the hypothesized assimilation boost effect, as they indicate that presenting exciting, sophisticated, or competent brands simultaneously with matching faces enhances brand personality inferences. Therefore, the analysis suggests that a simultaneous presentation of a face that matches a brand on a salient personality trait results in an assimilation boost effect.

Further, results on the alternative mechanisms of face attractiveness, emotional attachment to the brand, and self-similarity are equivocal. Attractive faces enhance brand personality inferences for some traits but have no effect on others. More specifically, participants rated brands as more exciting when paired with a matching attractive face. This finding agrees with previous studies on source attractiveness effects showing that consumers have more favorable brand attitudes under the condition of high attractive than less attractive endorsers that might again boost brand perceptions (e.g., Kahle and Homer 1985; Till and Busler 2000; Liu, Huang, and Minghua 2007). However, face attractiveness did not enhance brand personality inferences for the other brand personalities which might be related to the relevance of the product category. For example, researchers found that combining highly attractive endorsers with problem-solving or attractiveness-irrelevant products did not generate more positive attitudes toward the product compared to a less attractive endorser (Kamins 1990; Bower and Landreth 2001). Competent brands can be assigned to attractiveness-irrelevant products (here: Aspirin) and jointly presented with an attractive endorser need not necessarily result in higher brand personality perceptions. Thus, confirming previous results source attractiveness appears not to be applicable for all product categories. However, the reason why the perception of sophisticated brands (here: Nivea as an attractiveness-relevant product) did not increase remains unclear. Overall, the finding that face attractiveness does not enhance the assimilation boost effect uniformly across brand personality dimensions clearly agrees on previous mixed findings.

Emotional attachment to the brand was found to enhance the effect of matching faces on personality impressions and, as such, presents a moderator to the assimilation boost effect. Therefore, these findings indicate that the emotional bond to a brand not only enhances commitment (Bergami and Bagozzi 2001) but also extends to cognitive responses (i.e., brand personality perceptions). Thus, emotional attachment to a brand further increases the assimilation boost effect.

A greater self-similarity enhances brand personality inferences for some traits but have no effect on others. Specifically, findings show that self-similarity moderates the assimilation boost effect only for sophisticated brands. On the one hand this finding agrees on previous findings on source similarity effects showing that increased self-similarity results in liking and this in turn can increase endorser effectiveness (e.g., Feick and Higie 1992; Brewer 1979). On the other hand why effects of perceived self-similarity did not extend to exciting and competent brands remains unclear and needs to be clarified in another experiment manipulating self-similarity.

Finally, results from Study III indicate stronger purchase intentions when endorser faces and brands match on a salient personality trait, confirming earlier findings on the relations between brand personality and purchase intention (e.g., Orth and Malkewitz 2008; Batra, Lenk, and Wedel 2010). In sum, results highlight that the assimilation boost effect extends to purchase intentions.

4.3.4 Study IV: The Contrast Boost Effect

4.3.4.1 Method

While Study III focused on the assimilation boost effect, Study IV tests the hypothesized contrast boost effect, and specifically the hypothesis that brand personality inferences will be boosted when face and brand personality mismatch rather than match under conditions of sequential exposure⁶².

Participants were another 120 students ($M_{\text{age}} = 24.1$ years, 48% females) recruited from the same public university who had not participated in any of the previous studies. Stimuli and procedures were identical to Study III except for the display of faces and brands, which took place sequentially rather than simultaneously – the face first followed by the brand. To ensure the success of the manipulation, participants could not go back and view the face again after seeing the brand names. While viewing the face, participants completed questions on face attractiveness, face-based personality, familiarity with the face, and perceived self-similarity. While viewing the brand, they completed questions on brand personality, and emotional attachment to the brand before submitting information on sociodemographic data, the perceived match between face, and purchase intention (see appendix E for the questionnaire).

⁶² Study IV was conducted in a separate experiment to exclude any possible carryover effects. These effects could occur due to the familiarity of faces if the same participants were to see the faces again. Separate studies were also carried out in the study of Batra and Homer (2004).

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The employed measures and scales were identical to those in Study III. Consistent with the original application, all scale items loaded on expected factors ($IFC > .50$) and indicated a satisfactory fit. The reliability measure exceeded the threshold level (Cronbach's $\alpha > .50$). Table 19 summarizes the statistics for these constructs.

Table 19: Summary Statistics and Reliabilities for Study IV Constructs

Variable	Number of items	M	SD	α
Brand personality				
Excitement	4	3.31	.97	.79
Sophistication	3	3.51	1.01	.77
Competence	2	2.65	.89	.65
Face attractiveness	3	4.20	1.74	.93
Emotional attachment to brand	3	4.86	1.78	.84
Self-similarity	3	6.17	1.16	.81
Purchase intention	3	4.70	1.63	.78
Perceived match	3	3.37	1.85	.93

Source: author's calculation

4.3.4.2 Results

Manipulation Checks. Again, participants were not familiar with the faces as intended ($M = 5.80$, $SD = 1.48$). The match manipulation had a significant effect on perceived fit, with matching combinations resulting in a higher perceived fit than mismatching combinations ($F(1,119) = 4.61$, $p < .01$, $M = 3.91$ vs. $M = 5.22$). Neither brand ($F(2,118) = .87$, $p > .05$) nor gender ($F(1,119) = .99$, $p > .05$) had a significant effect on perceived match but endorser face did ($F(3,117) = 8.77$, $p < .01$). These findings are taken as evidence that the manipulation of faces and brands was successful.

Testing the Contrast Boost Effect. Hypothesis 2 posited that when consumers view first a face and then a brand, a personality mismatch would boost impressions on that trait. To test this claim, three ANOVAs were performed, one for each trait.

Results indicate a significant effect of mismatch on excitement ($F(1,112) = 3.94$, $p < .05$), sophistication ($F(1,112) = 4.03$, $p < .05$), and competence ($F(1,112) = 4.07$, $p < .05$). In line with author's expectations, participants perceived the exciting brand as more exciting under the condition of a mismatching rather than a matching face ($M = 3.42$ vs. $M = 3.18$). Accordingly, they perceived the sophisticated brand as more sophisticated ($M = 3.04$ vs. $M =$

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2.77) and the competent brand as more competent ($M = 2.36$ vs. $M = 2.02$). Collectively, these results provide support for hypothesis H2.

Testing Alternative Explanations. As with Study III, the role of three variables was tested. Face attractiveness had a significant main effect on sophistication ($F(19,118) = 1.68, p < .05$), but not on excitement ($F(19,118) = .90, p > .05$) and competence ($F(19,118) = 1.20, p > .05$). The face attractiveness \times mismatch interaction was not significant for competence ($F(32,119) = .80, p > .05$) and excitement ($F(32,119) = .84, p > .05$), but significant for sophistication ($F(32,119) = 1.58, p < .05$), with participants rating the sophisticated brand as more sophisticated when it was preceded by a mismatching attractive rather than matching face ($M = 3.13$ vs. $M = 2.87$). Taken together, these findings are in line with Study III in that the effect of face attractiveness on the contrast boost effect depends on specific personality traits, but cannot be established universally.

Emotional attachment to the brand had a significant main effect on sophistication ($F(18,119) = 1.86, p < .05$), but neither on excitement ($F(18,119) = 1.54, p > .05$) nor competence ($F(18,119) = 1.62, p > .05$), with more attached participants perceiving the brand as more sophisticated ($M = 3.21$ vs. $M = 3.72$) than less attached participants. More importantly, the emotional attachment \times mismatch interaction was significant for sophistication ($F(18,119) = 1.86, p < .05$) and competence ($F(18,119) = 1.72, p < .05$), but not for excitement ($F(18,119) = 1.54, p > .05$), with brand impressions weaker under conditions of strong emotional attachment to the brand and mismatching rather than matching faces for sophistication ($M = 2.56$ vs. $M = 3.11$) and competence ($M = 1.92$ vs. $M = 2.09$). Taken together, these findings indicate that a weakening effect of emotional attachment on the contrast boost effect occurred only for specific personality traits but not as a general rule.

Self-similarity had no significant main effect on excitement ($F(13,119) = .70, p > .05$), sophistication ($F(13,119) = .53, p > .05$), or competence ($F(13,119) = 1.06, p > .05$). Furthermore, the self-similarity \times mismatch interaction was not significant for excitement ($F(20,112) = .86, p > .1$), sophistication ($F(20,112) = .45, p > .05$), or competence ($F(20,112) = 1.44, p > .05$). These findings indicate that self-similarity does not provide an alternative explanation to the contrast boost effect.

Influence on Purchase Intentions. The author also tested whether effects of the mismatching condition extend to purchase intentions. Mismatching faces and brands had no significant main effect on purchase intentions ($F(18,119) = .99, p > .05$). Moreover, the mismatch \times personality

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interaction was nonsignificant for excitement ($F(1,112) = .66, p > .05$), competence ($F(1,112) = 1.35, p > .05$), and sophistication ($F(1,119) = .22, p > .05$), with weaker purchase intentions under conditions of a mismatch compared to a match for excitement ($M = 5.04$ vs. $M = 4.90$), sophistication ($M = 5.00$ vs. $M = 4.06$), and competence ($M = 5.30$ vs. $M = 4.43$), suggesting that the contrast boost effect does not extend to purchase intentions, since consumers are still more likely to purchase the brand that matches the endorser's face, even in a sequential presentation mode.

4.3.4.3 Discussion

Study IV findings provide support for the hypothesized contrast boost effect as they indicate that preceding exciting, sophisticated, or competent brands with mismatching faces enhances brand personality trait inferences. Therefore, the analysis suggests that a sequential presentation of first a face and then a brand that mismatch on a personality trait results in the contrast boost effect.

The findings on the influence of face attractiveness, emotional attachment to the brand, and perceived self-similarity closely resemble those obtained in Study III in that no clear pattern could be established: face attractiveness enhances the contrast boost effect only for sophisticated brands, emotional attachment to the brand weakens the contrast boost effect only for sophisticated and competent brands, and self-similarity has no significant impact.

More precisely, findings on face attractiveness partially confirm the mixed results on source attractiveness. Confirming results in Study III, endorser attractiveness did not influence consumer's brand perception of competent brands. However, the perception of sophisticated brands instead of exciting brands was boosted under the condition of attractive endorsers presented sequentially. These findings support the ambiguous character of source attractiveness.

Emotional attachment was found to weaken the contrast boost effect only for specific personality traits including sophistication and competence. Again, a face and brand personality mismatch formed the basis of the contrast boost effect. This finding indicates that consumers might have experienced the mismatch between face-evoked and brand-based personality impression as negative information and those consumers with strong emotional bonds to sophisticated and competent brands were not able to forgive. However, the fact that this was not true for excitement suggests that consumers forgave the mismatching endorser. Furthermore, Aaker et al. (2004) found that consumers felt only a stronger bond with exciting brands after transgression, which

might explain that brand personality perceptions of consumers attached to exciting brands were not weakened by the mismatch.

Self-similarity did not enhance brand personality inferences and could not be identified as a moderator for the contrast boost effect which is not conform with previous studies (e.g., Brewer 1979; Feick and Higie 1932). However, the mode of exposure might be one potential explanation. In order to evaluate self-similarity with the endorser participants need some time. Specifically, the fact that participants were not allowed to turn back to the page with the face might have decreased the time for comparisons and increased participants to sink into oblivion.

Overall, these findings on the influence of the alternative variables on the contrast boost effect do not fully reflect those obtained in Study III, however, they confirm those results in that no clear pattern could be established which asks for more research.

Finally, results suggest that the contrast boost effect does not extend to purchase intention (whereas assimilation boost effect extended to purchase intention) as consumers still intend to buy brands that match (as opposed to mismatch) on one of the three investigated personality traits. It seems worthwhile to explore this latter finding further, which is why the following Study V was conducted. Specifically, Study V will (1) combine the simultaneous and sequential presentation of endorser faces and brands into one study, which were studied separately in the previous experiments and (2) shed more light on the emotional basis of the boost effects, which may help explain the differential impact of the assimilation and contrast boost effect on purchase intentions.

4.4 Study V: Neural Correlates of the Boost Effects

4.4.1 Objectives

To corroborate findings obtained in the previous psychometric studies, Study V aims at providing evidence that the match (or mismatch, respectively) between face and brand as well as the mode of exposure (simultaneous vs. sequential) and the resulting assimilation and contrast boost effects relate to differences in both brain activation (as cause) and choice behavior (as consequence).

To identify such mechanisms in the brain and to further substantiate the boost effects, an extensively pre-tested novel choice task was designed and brain data were collected by conducting a neuroimaging experiment, utilizing functional magnetic resonance imaging

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(fMRI). The primary hypothesis tested in this brain imaging study is that the matching and simultaneous presentation of stimuli has the property of engaging neural systems in the brain known to be important for processing emotional information. This engagement of limbic (emotion) neural systems has been shown to exert a profound effect on choice and behavior (e.g., Bechara, Damasio, and Damasio 2000; Bechara 2004; Shiv 2007), thus also resulting in a boost effect at the behavioral level (i.e., increased number of choices). Table 20 summarizes important details of Study V.

Table 20: Overview of Study V

	Study I	Study II	Study III	Study IV	Study V
Objective	<i>Holistic Face Types</i>	<i>Personality Trait Inferences from Holistic Face Types</i>	Testing the <i>Assimilation Boost Effect</i> : presenting brands side by side with matching faces enhances brand personality inferences; Testing alternative explanations	The <i>Contrast Boost Effect</i> : presenting first the mismatching face and then the brand enhances brand personality inferences; Testing alternative explanations	<i>Neural Correlates of the Boost Effects</i>
Method	Psychological measurement (expert ratings; N=60)	Psychological measurement (student sample; N=165)	Psychological measurement (student sample; N=160 pretest, N=369 main study)	Psychological measurement (student sample; N=120)	Behavioral and functional neuro-imaging experiment (student sample; N=22)
Mode of Exposure	Faces in isolation	Faces in isolation	Simultaneous presentation of faces and brands	Sequential presentation of faces and brands	Simultaneous and sequential presentation of faces and brands
Key Findings	Identification of ten <i>Holistic Face Types</i>	Systematic relationships between <i>Holistic Face Types</i> and strategically valuable <i>Personality Traits</i>	1) Identification of the <i>Assimilation Boost Effect</i> 2) No clear pattern for effects of face attractiveness and self-similarity 3) Emotional attachment to the brand strengthens the Ass. Boost Effect for all personality traits 4) Purchase intentions higher in the matching condition (Ass. Boost Effect extends to purchase intention)	1) Identification of the <i>Contrast Boost Effect</i> 2) No clear pattern for effects of face attractiveness and self-similarity 3) Emotional attachment to the brand weakens the Cont. Boost Effect for sophisticated and competent brands 4) Purchase intentions higher in the matching condition (Cont. Boost Effect does not extend to purchase intention)	

Source: author's own composition

4.4.2 Theoretical Background

Neuromarketing and Introduction to fMRI

In recent years, the application of neuroscience to analyze and understand human behavior has gained immense attention. This field of study is simply known as neuromarketing (Lee, Broderick, and Chamberlain 2007). Neuromarketing uses information on brain functions and mechanisms to explain what is happening inside the famous “black box” of consumers. Observing brain activations during information processing can uncover subconscious processes, such as emotions, whereas traditional methods such as self-reports fail to uncover subconscious processes (Fugate 2007; Kenning, Plassmann, and Ahlert 2007). Although “ninety-five percent of thinking takes place in our unconscious minds – that [...] stew of memories, emotions, thoughts, and other cognitive processes we are not aware of or what we can’t articulate”, most studies are based on questionnaires (Zaltman quoted in Plassmann et al. 2008). Therefore, the neurobiological substrates of human emotion are attracting increasing interest (Dolan 2002).

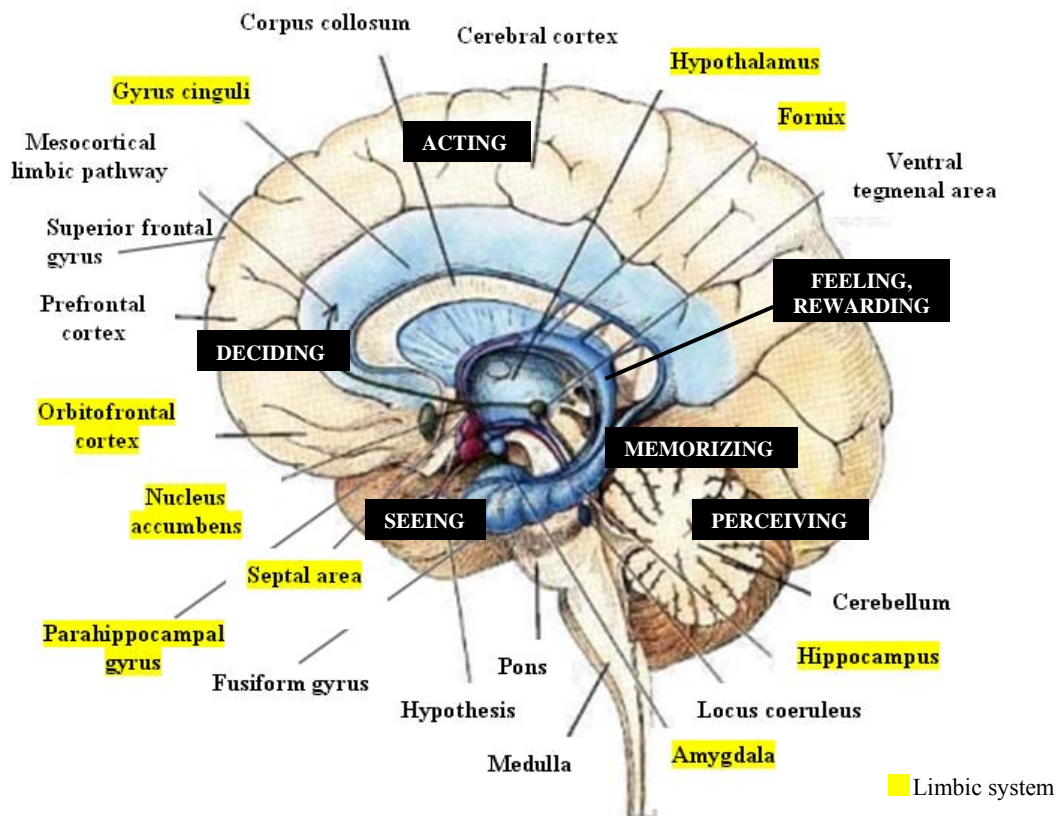
One main focus in consumer research has been the role of emotions that are central to understand attitude formation and consumer behavior (e.g., Bagozzi et al. 1999). Most researchers agree that an attitude has three components: affect, behavior and cognitions (Assael 1998; Solomon et al. 2006). Affect is related to consumer’s feelings and emotions. Cognitions represent consumer’s opinions, thoughts or beliefs. Behavior includes consumer’s intentions to act and responses that result from their beliefs and emotions (Solomon et al. 2006). This model is known as the ABC model. More precisely, Solomon et al. (2006, p. 140) argue that “this model emphasizes the interrelationships between knowing, feeling and doing”. According to this model, consumers first form beliefs (cognitions), then emotions (affect), and engage in a behavior. Another option is that beliefs come first, behavior next, and feelings last. Finally, it is suggested that consumers feel first, then act, and form beliefs last. The hierarchy of effects clearly shows that researchers have developed a fixed sequence of the three components (Solomon et al. 2006). Thus, emotions and cognitions are widely regarded as distinct and separable. However, “although the two systems may be largely separable or distinct, they are also inseparable, in a strong sense. They intertwine so closely that at times it is impossible to discern which is doing what, and yet both are clearly contributing to the overall function” (Gray 2004, p. 46). Overall, researchers argue that emotions and cognitions interact and conjointly contribute to consumers’ formation of attitude

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and behavior (e.g., Gray, Braver, and Raichle 2002; Gray 2004; Peter and Olson 2008), which is increasingly investigated in neuroscience research.

Based on a neuroscientific perspective, emotions are physiological responses induced by specific brain systems (Damasio 2000). To detect emotional responses evoked by any visual stimuli researchers focus on a set of signs including, for example, body gestures, facial expressions, action tendencies, and physiological responses (Bagozzi et al. 1999). There are numerous psychophysiological approaches that measure emotional responses to marketing stimuli including pupil dilation response, electrocardiogram or electrodermal response among others (Kenning, Plassmann, and Ahlert 2007). However, their application is somehow limited. Specifically, evaluating the valence (positive vs. negative) of activations is not possible in order to shed light on consumer's processing of emotional responses (Kenning, Plassmann, and Ahlert 2007). Therefore, neuroimaging experiments are conducted that help to uncover the valence of emotional responses. In several experiments, emotions have been shown to originate in the limbic system, which refers to the center of emotions that is responsible for functions related to the self, emotions and the memory (see figure 9 for the limbic system and other brain areas).

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Source: adapted from http://www.claudia-hausmann.de/css/images/lim_sys.jpg

Figure 9: The Limbic System and other selected Brain Areas

The limbic system consists of several structures including the fornix⁶³, hippocampus⁶⁴, cingulate gyrus⁶⁵, amygdala⁶⁶, the parahippocampal gyrus⁶⁷, septal area⁶⁸, nucleus accumbens (NAcc)⁶⁹, orbitofrontal cortex (OFC)⁷⁰, and parts of the hypothalamus⁷¹ (MacLean 1955; Raab, Gernsheimer, and Schindler 2009).

At present, functional magnetic resonance imaging (*fMRI*) is the most popular neuroimaging technique among others⁷² that is frequently used by consumer researchers and “offers an

⁶³ The fornix connects the hippocampus to the hypothalamus.

⁶⁴ The hippocampus is involved in learning and memory.

⁶⁵ The role of the cingulate gyrus is discussed in section 4.4.5.

⁶⁶ The amygdala is recognized for its associations with emotions, fear and aggressions.

⁶⁷ The parahippocampal gyrus surrounds the hypothalamus and is involved in memory encoding.

⁶⁸ The septal area is related to reward and reinforcement.

⁶⁹ The NAcc is involved in processing rewards.

⁷⁰ The OFC is the only cortical area (rational) that is connected with the limbic system (emotional). OFC is involved in decision-making and is a unique location with regard to reward processing.

⁷¹ The hypothalamus regulates basic biological needs: hunger, thirst, sleep, sexual drive and response to anxiety.

⁷² There are other neuroimaging techniques including measuring electrical activity of the brain and neural metabolism processes (Kenning, Plassmann, and Ahlert 2007, for an overview); *fMRI* belongs to the latter one.

exciting new window onto underlying mental processes and activities” (Shiv et al. 2005; Yoon et al. 2006, p. 38). In general, fMRI produces the structural (MRI) and the functional scan (fMRI) when subjects participate in an experiment. The structural scan displays images of both surface and subsurface brain structures with anatomical details. The functional scan creates images that show changes of brain activation representing blood level changes. Basically, the scanner produces powerful magnetic fields “to alter the orientation of atoms in the brain and measures signals given off by these atoms as they return to their normal orientation” (Shiv et al. 2005, p. 381). fMRI is an indirect measure for blood flow and is based on the fact that increased mental activity of a brain region requires more oxygen that is delivered through more blood flow at brain regions that are active (Blood Oxygenation Level Dependent-(BOLD)-Effect). Therefore, a neuronal activity of a brain region goes along with a change in the regional blood flow. The oxygen-carrying molecule, hemoglobin, has a different magnetic property and during activation the molecule leads to an increase of signal intensity (Shiv et al. 2005; Kenning, Plassmann, and Ahlert 2007). According to Shiv et al. (2005, p. 381), “brain areas that are active in performing a given task use more blood and, therefore, produce a stronger signal than other brain areas”. After data acquisition, the data has to be pre-processed first, then parameters have to be estimated and statistical inferences have to be assessed at last. The highly complex data analysis is summarized by Kenning, Plassmann, and Ahlert (2007, p. 140ff). Overall, the data analysis displays graphically which brain areas exhibit significant activity. Images are highlighted in different colors in order to facilitate visualization – for example, depending on the t-values (Kenning, Plassmann, and Ahlert 2007). Therefore, researchers get details of the brain areas being activated when the subject is performing the experimental task. During the experiment, subjects usually can press buttons on the response box and thereby, their behavior is recorded. Analyses further reveal information when (i.e., by ‘button press’) subjects were mentally active. Therefore, fMRI enables researchers to link subject’s actual choices to internal brain activity giving insights what brain activity might have led to behavior. Figure 9 illustrates brain areas where visual signals are processed (for a simplified description see Traufetter 2006).

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fMRI Studies on the Perception of Faces and Brands

Based on the wealth of empirical studies on face perception and the fact that the human face is a source of information, the number of neuroimaging studies on face and brand perception is also steadily increasing.

Extensive neuroscience research has focused on the visual processing of faces or the recognition of facial expressions. However, neuroimaging studies still represent basic and fundamental research that mainly identifies brain areas involved in visual processing (see figure 9 for areas of the specific brain parts referred to in the following). Face and object recognition involve different processes that are found to activate different brain areas (e.g., Kanwisher, McDermott, and Chun 1997; Mitchell, Heatherton, and Macrae 2002). For example, studies identified a region in the fusiform gyrus (non-limbic) to be active when respondents passively viewed faces vs. objects and refer to it as the fusiform face area which is located on the surface of the temporal lobe. An interesting feature of a face that can elicit strong affective responses is facial beauty (O'Doherty et al. 2003). Neuroimaging studies have revealed activity in reward structures including medial OFC and NAcc—both brain areas belong to the limbic system—when respondents were exposed to attractive faces (Aharon et al. 2001; O'Doherty et al. 2003; Bray and O'Doherty 2007). Rewards, in turn, can induce feelings of pleasure and contribute to positive emotions that have been shown to guide consumer's decision-making process. Especially, according to Bechara, Damasio, and Damasio (2000, p. 295), “the orbitofrontal cortex represents one critical structure in a neural system subserving decision making”. Further, the key idea of a major neuroscientific framework of human decision-making, the somatic-marker theory by Damasio (e.g., Damasio, Tranel, and Damasio 1991; Damasio 1996; Bechara and Damasio 2005), is that the decision-making process is guided by signals (somatic markers) which influence decision-making before thinking about benefits or drawbacks and express themselves in emotions and feelings. Thus, somatic markers are bodily marker signals that arise in bioregulatory processes which are working ahead of rational decision-making (Bechara, Damasio, and Damasio 2000). Somatic marker theory suggests that rational decision-making depends on prior accurate emotional processing. Further, Gray, Braver, and Raichle (2002, p. 4115) found that emotional states “can influence cognition-related neural activity in lateral prefrontal cortex (PFC)” and took this as evidence for an integration of emotion and cognition.

Quite recently, the ventral striatum was found to be active when a neutral stimulus was repeatedly paired with pleasant visual stimuli (i.e., attractive faces vs. unattractive faces). The ventral striatum (also known as the reward center), consisting of the NAcc and other brain

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areas, is found to be activated when stimuli related to rewards are presented (e.g., receipt of monetary reward; Delgado et al. 2000). Researchers propose that attractive faces work as visual rewards (Bray and O'Doherty 2007). Research on the underlying mechanism of forming trait impressions is recently gaining attention. For example, the amygdala automatically (without any requirement for explicit judgment) tracks the trustworthiness of a face (Engell, Haxby, and Todorov 2007) - a highly relevant brain area of the limbic system. The amygdala is involved in a variety of functions including fear or emotional memory processing. Increased activation was found in case of untrustworthy faces (Engell, Haxby, and Todorov 2007). Another interesting research area relates to the neural responses of different facial expressions being found to be involved in generating emotions by activating brain regions such as the amygdala (fearful faces) and orbitofrontal cortex (happy faces) (Morris et al. 1996; Blair et al. 1999). Again, the amygdala is a critical neural structure involved in triggering affective signals of outcomes (Bechara, Damasio, and Damasio 2000; Bechara 2001; Bechara, Tranel, and Damasio 2002). Overall, neuroimaging studies clearly identify the emotional nature of face perception.

The application of fMRI is said to hold great potential for theorists and practitioners and the current literature reflects growing interests for marketing related issues (Yoon et al. 2006). Studies have demonstrated more activation for attractive brands (e.g., sports cars, familiar drinks) associated with brain areas involved in reward and reinforcement including ventral striatum, orbitofrontal cortex, and cingulate (Erk et al. 2002; McClure et al. 2004). This indicates that brands could be considered as a potential social reward, because owning a luxurious car can reinforce social status (Erk et al. 2002). Further, reward system is found to correlate with positive descriptions such as pleasant, liking or desirable (Kenning, Plassmann, and Ahlert 2007). Just passively viewing familiar brand logos were shown to activate the medial prefrontal cortex (MPFC) – linked to reward expectations and self-relevant processing (Schaefer et al. 2006). A literature review of fMRI studies related to marketing issues is given by Kenning, Plassmann, and Ahlert (2007; p. 145) and suggests brands recruit brain areas which are essential for integrating emotions and self-reward. However, most of those studies assess only the neural basis for choices between different brands. Based on the high interest for brand personality in marketing, Yoon et al. (2006) investigated which brain regions are involved when subjects make brand versus human personality judgments. Results revealed that judgments of humans and brands are processed in different brain areas. MPFC was found to be more active in case of human personality judgments indicating a specific self-

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referencing process as indicated by social comparison theory (see section 2.2.3). In case of brand personality judgments, the lateral prefrontal cortex was identified to be more active that is particularly related to object processing.

Taken together, findings of the fMRI studies suggest that the application of functional imaging techniques to consumer research is quite promising. More specifically, they highlight the important role of emotions evoked by visual stimuli including faces and brands.⁷³ Based on these results and the essential role of emotions in decision-making according to Damasio and Bechara (e.g., Damasio 1996; Bechara and Damasio 2005), the finding that faces activate brain regions involved in emotion processing and brands recruit brain areas related to rewards, and the fact that brands are mostly presented with endorser faces, yet, little is known about how emotions arise from perception of endorser faces and impact brand impressions. This is the objective of Study V. Previous research has also investigated how a neutral visual stimulus (no brands) is conditioned by pairing with pleasant faces presented simultaneously and how brand vs. human personality is processed. However, research on the neural responses to brand and human personalities has mainly focused on distinguishing judgment-related processes in the brain without further investigating the mode of exposure of face and brand or analyzing underlying emotional processes (Yoon et al. 2006). Therefore, the primary goal in Study V is to test if the matching and simultaneous presentation of stimuli has the property of engaging neural systems in the brain known to be important for processing emotional information. This engagement of limbic (emotion) neural systems has been shown to exert a profound effect on choice and behavior (e.g., Bechara, Damasio, and Damasio 2000; Bechara 2004; Shiv 2007), thus also resulting in a boost effect at the behavioral level (i.e., increased number of choices). Specifically, Study V combines the different modes of exposure of endorser faces and brands into one study, which were studied separately in the previous experiments. Study V aims at providing insights into the emotional basis of the boost effects, which may help explain the differential impact of the assimilation and contrast boost effect on purchase intentions.

⁷³ However, Kenning, Plassmann, and Ahlert (2007) note that all studies have a more explorative character and still represent basic research.

4.4.3 Method

Twenty-two male volunteers ($M_{\text{age}} = 23.7$ years) were recruited from a participant pool of a large private university to participate in the neuroimaging experiment. Later, the data of four participants was excluded because of excessive head motion. Following review and approval of the experimental protocol by the university's institutional review board (institutional review board, IRB, approval), participants visited the brain imaging facility, gave a written informed consent, and successfully passed a medical screening for neuroimaging eligibility (see appendix F for the forms). Prior to the brain scans important information about the participants relevant for the scanner including participants' identification number, weight and height had to be entered into the scan desktop. Before the scanning session, participants also performed a short training version of the choice task to alleviate potentially distorting confusion or learning effects during the brain scans. Once inside the brain scanner, participants responded to the long version of the task while lying on their backs viewing the stimuli projected onto a mirror located directly in front of their eyes. They provided responses by pressing one of two buttons on a response box, which they held in both hands. The total time participants spent inside the brain scanner was 60 minutes, which included receiving instructions, conducting the choice task during a functional brain scan, and undergoing an anatomical scan. After the brain scanning session, participants were reimbursed with \$20.

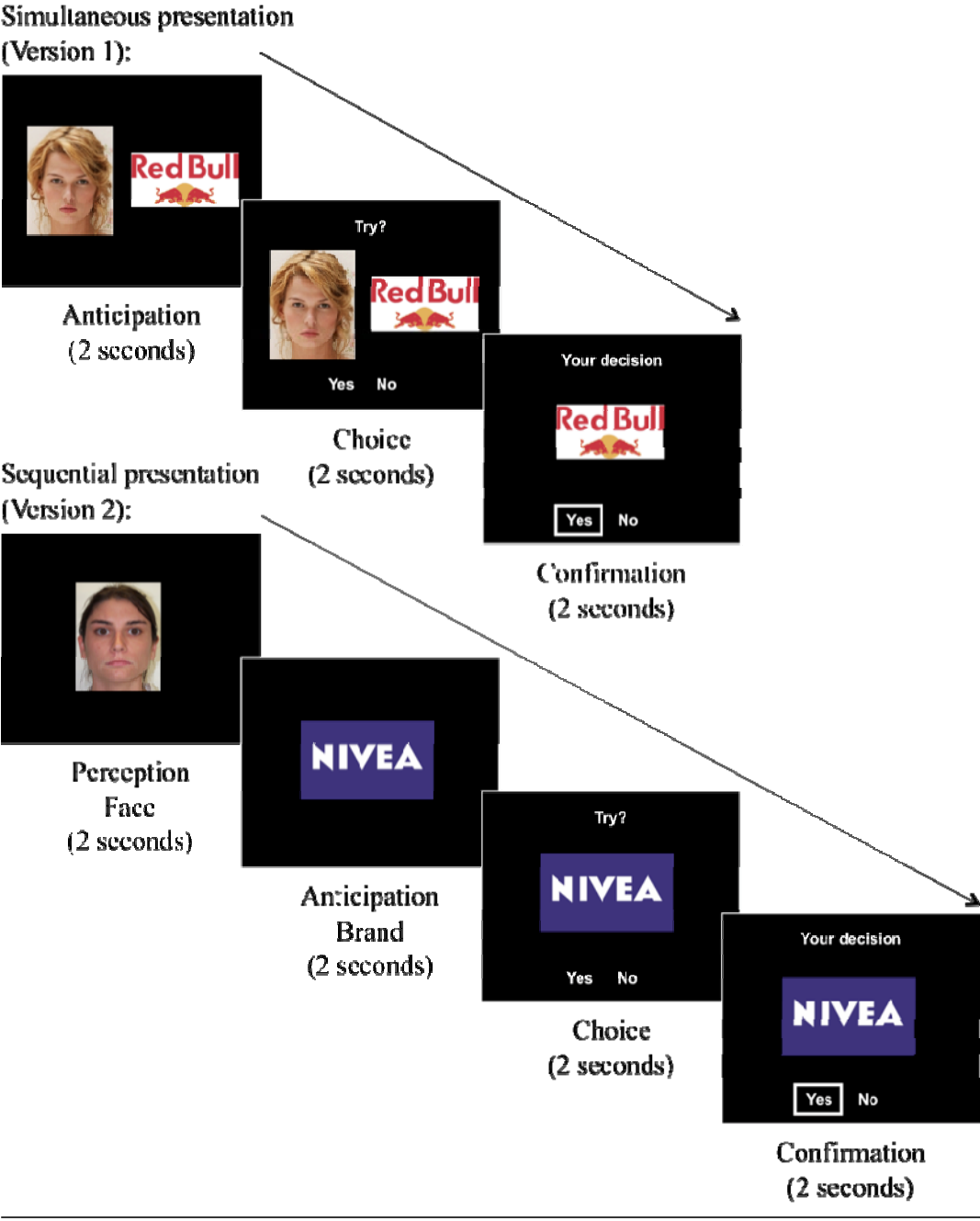
Similar to the experimental design of Study III and IV, a choice task was designed in which participants viewed different brands endorsed by different faces and then chose or rejected brands. To exclude previously established influences of gender or at least to control for it, pictures of female faces were employed and the sample consisted of heterosexual males only. The choice task was created in the presentation software E-Prime 2.0 (manufactured by Psychology Software Tools, Pittsburgh, Pennsylvania) and consisted of two different versions of 90 choice trials each, totaling 180 different choices.

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Experimental conditions included (1) a matching set of three faces and ten brands (i.e., the matching condition), (2) a mismatching set of three faces and ten brands (i.e., the mismatching condition), and (3) a set of three neutral stimuli and ten brands (i.e., the neutral condition). While the pictures of faces and some brands were taken from Study II (extended by typical U.S. brands) and their match pre-tested, the neutral stimuli included photographs of a shopping basket, a shopping cart, and a store shelf (Lang, Bradley, and Cuthbert 1997), all of which elicited neutral levels of arousal and valence.

Once inside the brain scanner, participants were welcomed to a virtual product promotion stall in a supermarket. They were told that several endorsers would present different grocery brands and ask them to choose or reject these brands. During the first block of 90 trials (i.e., version 1), faces and brands were presented *simultaneously*. That is, each trial started with the face of the endorser shown next to the promoted brand at the same time, representing the two-second “anticipation” phase. Next, participants responded to a question asking whether or not they would like to try the brand by pressing one of two buttons on a response box for either “yes” or “no”, representing the two-second “choice” phase. Then, participants saw a confirmation of their choice before the next trial started (“confirmation” phase, 2 seconds). During the second block of 90 trials (i.e., version 2), the faces and brands were shown *sequentially*. That is, each trial started with the face of the spokesperson (“perception face”, 2 seconds), followed by the presentation of the brand (“anticipation brand”, 2 seconds). Next, participants made their yes/no choice (“choice”, 2 seconds), followed again by a confirmation of participants’ choice (“confirmation”, 2 seconds). Figure 10 illustrates the two versions of the choice task followed by technical aspects of fMRI data collection.

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Source: author's exposition

Figure 10: Choice Task of Study V

Summary of the fMRI Data Collection. Brain imaging was conducted using a full-body 3.0 Tesla Siemens Magnetom scanner (manufactured by Siemens, Erlangen, Germany) fitted with a 12-channel matrix head coil. First, a functional imaging was conducted and a time series of 753 volumes across the complete choice task was collected, with 41 slices in the transverse

plane, using single shot gradient-echo planar imaging ($TR^{74} = 2,000$ ms, $TE^{75} = 25$ ms, flip angle = 90° , resolution = 3.0 mm x 3.0 mm x 2.5 mm, and $FOV^{76} = 192$ mm). Once the participant finished the choice task, a high-resolution structural image of each participant's brain was taken, using a 3D T1-weighted⁷⁷ MPRAGE⁷⁸ sequence.

Imaging data were preprocessed and analyzed using BrainVoyager QX 1.10 (manufactured by Brain Innovation, Maastricht, The Netherlands). For each participant, standard methods were used in order to perform linear image realignment, co-registration, non-linear normalization to stereotactic anatomical space, and spatial smoothing with a three-dimensional Gaussian kernel, 4 mm full-width at half maximum.

Participants' anatomical images were normalized to the Talairach and Tournoux (1988) brain template. Changes in the BOLD (blood oxygen level dependence) contrast were assessed for each voxel using the volume map (i.e., the map of brain function over the course of the experiment) of each participant.

4.4.4 Results

Brain data. In line with the notion that emotional states precede and trigger behavior (Bechara et al. 1997; Knutson and Greer 2008), the author focused the analysis of the neuroimaging data on the anticipation phases of the task (see appendix B for a summary). That is, the study objectives dictated to focus on the activation differences right *before* participants made their actual choice by pressing a button on the response box. For that reason, the author created a stimulus protocol for each two-second interval of the choice task and defined six unique predictors. The first version of the choice task contained three predictors, pooling (1) all matching sets of faces and brands that were presented simultaneously (i.e., SimMatchFaceBrand), (2) all mismatching faces and brands that were presented simultaneously (i.e., SimMismatchFaceBrand), and (3) all neutral pictures and brands that were presented simultaneously (i.e., SimNeutralPicBrand). The second version of the choice task—the sequential presentation of faces and brands—included another trio of predictors, summarizing (1) all brands that were preceded by matching faces (i.e., SeqMatchFaceBrand), (2) all brands that were preceded by mismatching faces (i.e., SeqMismatchFaceBrand), and

⁷⁴ Time to repeat

⁷⁵ Time to echo

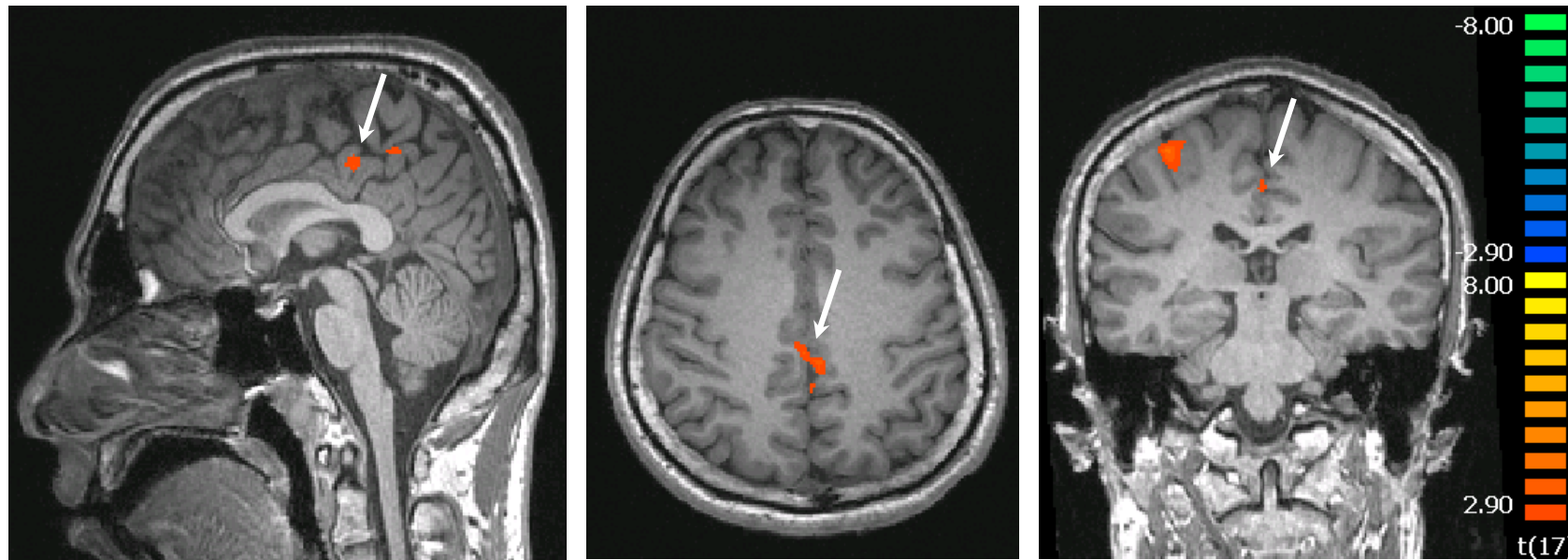
⁷⁶ Field of view

⁷⁷ Spin-lattice relaxation time

⁷⁸ Magnetization-prepared rapid acquisition with gradient echo

(3) all brands that were preceded by a neutral picture (i.e., SeqNeutralPicBrand). Next, the onset of each predictor was convolved with a two gamma hemodynamic response function to identify voxels with blood flow that correlated with the predictors. To correctly identify the predicted anatomical locations, the author used both the neuroanatomy atlas (Haines 2008) as well as the Automated Talairach Client (Lancaster et al. 2000).

For the simultaneous presentation of faces and brands, the matching set of faces and brands was contrasted with the mismatching set of faces and brands in the phase when participants were anticipating their subsequent choice (i.e., SimMatchFaceBrand > SimMismatchFaceBrand). A whole brain analysis was first run (a so called first-level analysis), calculating a random-effects general linear model (GLM). This approach resulted in activation differences in a number of brain areas at the whole-brain level (at $p < .01$, uncorrected). The cluster threshold was set at ten voxels, meaning that only activation differences greater than ten voxels were included. Then a second-level analysis was conducted, which allowed the testing of contrasts in particular brain regions rather than across the entire brain and, permitted greater sensitivity in detecting effects (Dietvorst et al. 2009; Hedgcock and Rao 2009). Accordingly, a second-level random-effects GLM was calculated at all active regions, finding significant activation increases for matching faces/brands compared to mismatching faces/brands in the *cingulate gyrus* ($t = 2.46$; $p < .05$; Talaraich coordinates: 0, -27, 38; left hemisphere; Brodmann area 31). This effect of increased cingulate gyrus activation also emerged when contrasting the matching set of faces and brands against the set of neutral pictures and brands ($t = 2.14$; $p < .05$; Talaraich coordinates: 2, -25, 37; right hemisphere; Brodmann area 31; predictors: SimMatchFaceBrand > SimNeutralPicBrand). However, this effect did not emerge in a contrast of the set of neutral pictures and brands against the mismatching set of faces and brands ($p < .05$, uncorrected; predictors: SimNeutralPicBrand > SimMismatchFaceBrand). The cingulate gyrus is one of the oldest and key components of the so-called “limbic system”, which is critical for processing emotional information. These findings suggest that the cingulate gyrus is critically involved when matching endorser faces and brands are presented simultaneously, but not when mismatching faces and brands or neutral stimuli and brands appear together, thus supporting the hypothesis that the boosting effects of matching-simultaneous presentations are at least partially due to properties that are emotional in nature. Figure 11 illustrates the identified activation increases in the cingulate gyrus for matching faces/brands compared to mismatching faces/brands.



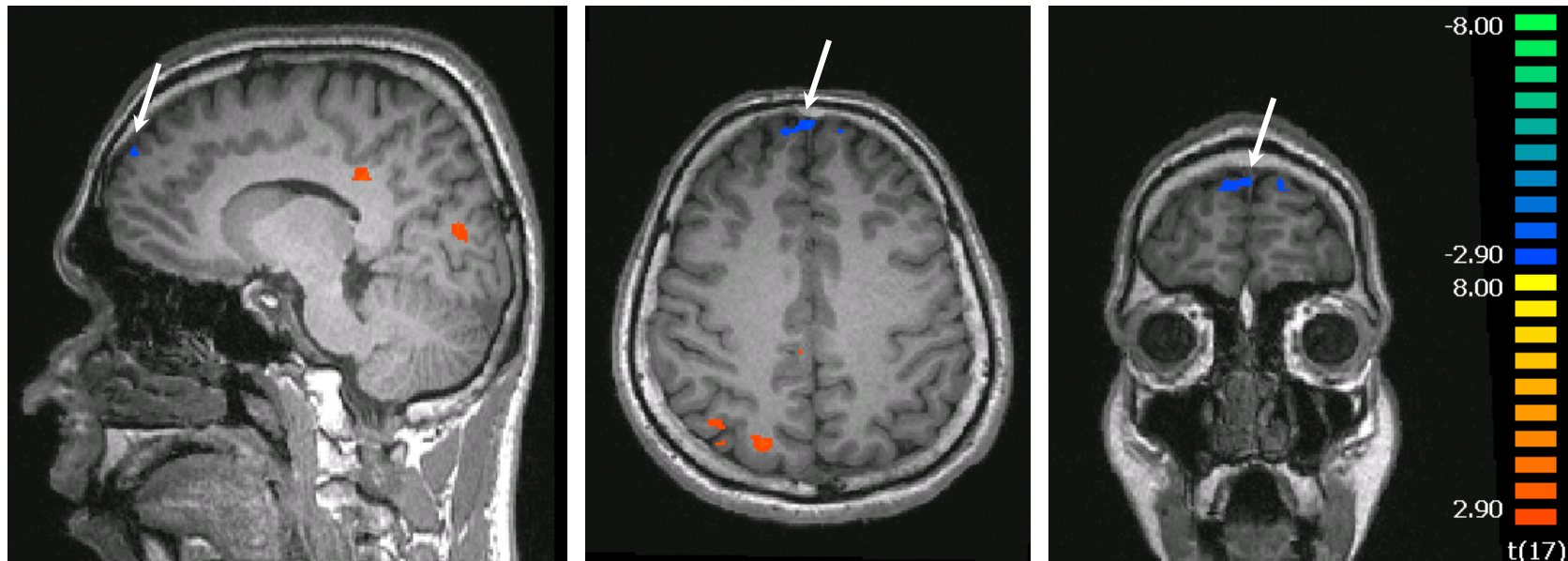
Note: Other activation differences shown in this figure, although significant at the whole brain level (first-level analysis), were not significant at the region-of-interest level (second-level analysis) at $p < .05$, uncorrected. The cingulate gyrus that was significant as a result of the second-level analysis is marked with an arrow.

Source: author's own calculation

Figure 11: Simultaneous Presentation of Faces and Brands: Significant Activation increase in the Cingulate Gyrus for matching Faces and Brands compared to mismatching faces and brands

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For the sequential presentation of faces and brands, brands preceded by matching faces with brands preceded by mismatching faces were contrasted (i.e., SeqMatchFaceBrand > SeqMismatchFaceBrand). Further, again a random-effects GLM at the whole brain level was run, resulting in activation differences in several brain areas (at $p < .01$, uncorrected). The cluster threshold was once more set at ten voxels. The analysis was continued and a second-level random-effects GLM at all active areas was calculated. This approach showed a significant activation decrease in the *prefrontal cortex*, particularly the *superior frontal gyrus*, for brands preceded by a matching rather than mismatching face ($t = -2.05$; $p < .05$; Talaraich coordinates: -6, 61, 33; left hemisphere; Brodmann area 9). These analytical steps were repeated for the set of brands preceded by matching faces compared to brands preceded by neutral pictures (i.e., SeqMatchFaceBrand > SeqNeutralPicBrand) as well as for the set of brands preceded by neutral pictures compared to the set of brands preceded by mismatching faces (i.e., SeqNeutralPicBrand > SeqMismatchFaceBrand). Both analyses did not reveal significant results in the second-level random-effects GLM at $p < .05$ (uncorrected). Figure 12 illustrates the identified activation decreases in the prefrontal cortex, particularly the superior frontal gyrus, for brands preceded by matching faces compared to brands preceded by mismatching faces.



Note: Other activation differences shown in this figure, although significant at the whole brain level (first-level analysis), were not significant at the region-of-interest level (second-level analysis) at $p < .05$, uncorrected. The prefrontal cortex that was significant as a result of the second-level analysis is marked with an arrow.

Source: author's own calculation

Figure 12: Sequential Presentation of Faces and Brands: Significant Activation decrease in the Prefrontal Cortex for Brands preceded by matching Faces compared to Brands preceded by mismatching Faces

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Behavioral data. While in the brain scanner, participants chose or rejected brands by pressing one of two buttons on a response box. Counting the number of “yes” and “no” choices for matching, mismatching, and neutral sets of faces and brands, the author found that participants choose brands significantly more often when faces and brands were matching rather than mismatching in both blocks.

In the first simultaneous presentation, participants chose brands in the matching condition 27.7 % of the time (rejected them 4.2 % of the time), whereas they chose brands in the mismatching condition only 10.4 % of the time (rejected them 21.4 % of the time), and chose brands in the neutral condition only 11.3 % of the time (rejected them 20.4 % of the time). Participants did not press the response box in 4.5% of the time. However, when participants saw faces and brands sequentially in the second block, they chose brands in the mismatching condition only 10.4% of the time (rejected them 21.0% of the time), while they choose brands in the matching condition 24.7% of the time (rejected them 6.6% of the time), and chose brands in the neutral condition only 12.3% of the time (rejected them 18.8% of the time). Participants missed pressing the response box in 6.3% of the time.

These results indicate that the assimilation boost effect extends to choice to a much greater extent than the contrast boost effect. Chi-square test results of the frequency counts of choices in the matching versus the mismatching condition and the matching versus neutral condition further support this finding ($\chi^2 = 659.21$, $df = 2$, $p < .05$). Furthermore, the relationship between activation in the cingulate gyrus and actual choice was analyzed, hypothesizing that increased cingulate gyrus activation precedes and, therefore, triggers brand choice. Following the approach of Vul et al. (2009), the amount of increase of brain activation in the cingulate gyrus (i.e., the percent-signal-change at Talairach coordinates: 0, -27, 38) with behavioral responses (i.e., “Yes” vs. “No” choices) was correlated. Results revealed a positive correlation between increased cingulate gyrus activation and the choice of brands matching with faces and being presented simultaneously ($r = .51$; $p < .05$), while it did not reveal such a link for mismatching faces and brands presented sequentially ($p > .05$). Overall, the behavioral results are consistent with the results from Study III and IV in showing that a match results in more choices and a mismatch results in fewer choices, which supports the notion that largely the assimilation boost effect, not the contrast boost effect, extends to purchase. Beyond these findings, evidence of a significant, positive relationship between cingulate gyrus activation and actual choice is provided, substantiating the claims on the assimilation boost effect triggering choice because of underlying emotional mechanisms.

4.4.5 Discussion

In summary, findings of the neuroimaging experiment suggest that the simultaneous presentation of matching faces and brands recruits a brain region of the limbic lobe—in particular, the cingulate gyrus—which is engaged in the development and processing of emotion as well as learning and memory of past emotional experiences (Damasio et al. 1994). Moreover, this brain structure was further recruited when participants experienced rewards (Ullsperger und Von Cramon 2003) and activated when feelings of security were provided (Roth 2003; Häusel 2006). The activation of the cingulate gyrus might indicate that the processing of matching faces paired with brands simultaneously can evoke emotions and feelings of security. However, the cingulate gyrus was not found to be active when face and brands were presented sequentially. Instead, an area of the prefrontal cortex—the superior frontal gyrus—was found to be less active when the author contrasted brands preceded by a matching phase with brands presented by a mismatching faces. Decreased activation in this brain region has been linked to increased response inhibition (Stuss et al. 2001); meaning, that participants were strongly inhibited from choosing a brand when a mismatching face preceded the brand and considerably less inhibited when a matching endorser preceded the brand.

Overall, the obtained neuroimaging findings support the notion that the assimilation boost effect has a unique neural basis, namely increased activation of a brain area (cingulate gyrus) that emotionally triggers choices. Specifically, this posterior region of the cingulate gyrus identified in this study is anatomically a part of the old limbic lobe. It receives many indirect anatomical projections from the viscera and the hippocampus, and numerous previous functional neuroimaging studies have shown it to be active when participants recall personal emotional experiences (i.e., emotional memory) (Damasio et al. 2000; LaBar and Cabeza 2006). Thus, in the current study, the simultaneous presentation of matching faces and brands is suggested to tap into an emotional memory system that boosts the person's affinity for that particular brand. However, this activation was found only for simultaneous and not for sequential face and brand presentations, providing a reason for why simultaneous presentation, but not sequential presentation, leads to choice.

4.5 General Discussion

4.5.1 Advancement of Theory

While much of the existing studies on endorsement concentrates on endorser attractiveness effects on brand recall, attitude, and purchase intention, the five presented studies combine different research areas including holistic face perception, match-up hypothesis, assimilation and contrast effects, and neuromarketing. In particular, they give insights into holistic face types related to personality traits that can boost brand personality perceptions under specific conditions. Additionally, Study V sheds light on the emotional nature of the identified assimilation boost effect and provides evidence that emotionalization or achieving emotional bonding is a key factor in consumer's decision-making process. The present five studies contribute to prior research in several ways that are presented for each study in the following.

First, research on face perception is extended by showing that holistic types of faces are rooted in unique combinations of anatomical facial features. Specifically, Study I contributes to extant research by offering an extensive assessment of human faces based on Gestalt psychology. Face experts included a range of individuals who have an expert eye on faces and perceptions due to their profession (e.g., face treatment). They rated a set of faces based on selected facial elements. Therefore, results rely highly on the visual acuity of these face experts. To the best of author's knowledge, Study I is the first that included face experts who rated faces. Further, a quite limited number of facial features and mostly the same (e.g., eyes, mouth, cheeks; see section 2.2 for a review) have been studied in research so far. The combinations of these facial elements then resulted in a few different face types including babyish, mature, feminine, and masculine faces. Therefore, Study I extends babyfaces and other types of faces based on attractiveness (e.g., classic beauty) and advances research on face types by integrating 112 facial features – collected through literature research and feedback from experts. Overall, in line with Gestalt psychology (Koffka 1922; Wertheimer 1925) and research on the holistic perception of faces (Tanaka and Sengco 1997) the author's evaluation of faces as a number of features configured into a holistic type establishes a generic taxonomy that may be useful in a large number of advertising and marketing contexts.

Second, the author broadens research on personality trait inferences from faces by showing that holistic face types systematically relate to five generic personality dimensions. This study

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provides initial evidence that faces convey a strategically valued set of personality impressions, analogous to how consumers infer impressions from advertising and packages and in line with previous studies. Current literature provides relationships between babyfaces and personality traits. Up to now, most research focused on how attractive faces are perceived. For example, Solomon, Ashmore, and Longo (1992) investigated how face types categorized by attractiveness (“good looks”) communicate specific brand images. In all of these studies, researchers considered only a few facial characteristics such as eyes and mouth and linked them to personality inferences (Paunonen et al. 1999). Study II advances the research by relating holistic face types to personality dimensions – holistic face types built through combinations of identified facial factors, comprised of several facial features. In sum, Study II findings complement research on the accuracy of personality inferences from visual stimuli (e.g., Little and Perrett 2007) and extend fragmented studies on personality trait inferences from facial features (Zebrowitz and Montepare 1992; Paunonen et al. 1999; Masip, Garrido, and Herrero 2004).

Third, the finding that the mode of exposure (sequential versus simultaneous) influences personality trait inferences from brands extends the growing body of research on assimilation and contrast effects (Schwarz and Bless 1992; Förster, Liberman, and Kuschel 2008). According to Shen, Jiang, and Adaval (2010), the mode of exposure or the temporal contiguity between the two stimuli was suggested to be of highly interest for future research, because the different exposure to the stimuli might moderate the ease of processing and evaluating them, that, in turn, could effect evaluations of product (Schwarz 2004).

Fourth, the author contributes to an extensively evolving research field on neuromarketing by testing findings from studies based on psychological measurements. Research has basically focused on one area by testing either brands or faces. Study V extends previous experimental set ups by integrating brands and faces in a same context. In sum, Study V provides empirical evidence for the unique neural basis (the cingulate gyrus) of a marketing phenomenon—the assimilation boost effect—and, as such, the author heeds to Perrachione and Perrachione’s (2008) call for integrating neuroscience and marketing research. Further, combining different procedures and measures, that is behavioral with brain imaging methodology, improves our understanding of important phenomena and therefore Study V advances both neuroscientific and consumer psychology research.

Lastly, by integrating the match between faces and brands as an important driver of endorsement effectiveness, the author brings new life to research on the match-up hypothesis (Kahle and Homer 1985). Research has mostly focused on attractiveness or expertise as the match-up dimension (see table 7). Study III and IV contribute to this research stream by integrating personality dimensions as match-up factors. The rationale behind this is that brand personality is highly acknowledged in brand management as a strategic communication concept differentiating brands from other competitor brands. It further has the ability to strengthen and build long lasting relationships with consumers. In most research, effects on similar variables were assessed including brand recall, attitude toward the brand and endorser (favorable or unfavorable) or purchase intention (see section 3.2.5 for a review). In fact, Study III and IV provide insights on how the match (mismatch) can influence perceptions of brand personality.

4.5.2 Managerial Implications

The present research reinforces the importance of carefully selecting endorser faces for brands in order to maximize the effectiveness of endorsements. The findings imply that to sharpen a brand's personality, marketing managers should give explicit attention to the holistic face type and the related personality trait inferences of their endorsers. In particular, this dissertation supports managerial decision-making when marketers seek new faces for display on product packages or in print advertisements (i.e., when the face and the brand are presented jointly), but possibly also for television commercials or online banner ads when the face is displayed first and then the brand logo/name. Here, this research suggests that the joint presentation of matching faces and brands elicits emotions that, in turn, drive brand choice. Yet, such an affective response was not observed for sequential presentation and mismatching brands. Although this combination still does boost brand personality impressions, the findings do not indicate that it leads to more brand choice. Based on findings from five empirical studies, implications for the management are briefly summarized in the following.

The results of Study I support the contention that holistic face types exist rooted in unique combinations of facial features. The ability to characterize faces by using the taxonomy established here is important as it enables marketers to better communicate with advertising agencies who select endorsers for advertising campaigns. It provides the shared vocabulary, associations, and conventions that are so eloquently called for in previous research

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(McCracken 1986). Study II identified associations between types of faces and personality impressions that were distinctive. Managers should use those systematic relationships in order to select and display endorsers in their advertisements. For example, findings suggest displaying rugged brands with endorsers featuring masculine facial elements or sophisticated brands with endorsers featuring feminine facial elements. Findings define holistic face types that firms, managers, and agencies should consider for achieving specific responses in order to target potential consumers.

Managers can benefit from the identified boost effects and increase consumer's brand perceptions with the choice of an appropriate type of face – depending on the mode of exposure. Results of Study III suggest that presenting exciting, sophisticated, or competent brands simultaneously with matching endorser faces enhances brand personality inferences (assimilation boost effect). Thus, advertisers should jointly display matching faces with brands covering one page, for example, in a print advertisement that, in turn, can also result in higher purchase intention than brands paired with mismatching faces. Also presenting endorser faces and brands jointly in TV commercials can elicit positive consumer responses. Furthermore, by selecting a higher attractive matching face, advertisers can only enhance personality perceptions of exciting brands. Marketers should further focus to strengthen consumer's emotional attachment to the brand that is highly relevant for boosting brand personality inferences. Selecting the 'typical consumer' for brands (i.e., similar to target consumers) is often aimed in advertising to increase consumer's self-reference and identification with the brand. Especially for sophisticated brands, advertisers should try to integrate similar matching endorsers, because findings indicate that self-similarity boosts brand impressions of sophisticated brands.

Potential examples are given in table 21. The print advertisements indicate how carefully brand managers and advertisers have selected endorsers. Different face types are displayed simultaneously matching with brands from several product categories that might work as a brand personality booster. In the case of the A1, Audi is currently looking for the most appropriate endorser face representing their distinctive, rugged and powerful Audi A1 and thus, a Handsome Face Type (male) might match their brand.

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Table 21: Potential Examples for Holistic Face Types and Brand Personalities

Potential example of advertisement campaigns	Holistic Face Type and inferred Personality Impression	Perceived Brand Personality
	<p><i>Soft Face Type:</i> sincere, exciting, sophisticated</p>	<p>Dynamic, cheerful, up-to-date, tough, spirited, honest, imaginative</p>
	<p><i>Handsome Face Type:</i> Sincere, exciting, rugged</p>	<p>Down-to-earth, honest, tough, clever, dynamic, motivated, straightforward, successful</p>
	<p><i>Expressive Face Type:</i> Sincere, competent, sophisticated</p>	<p>Glamorous, charming, spirited, exciting, passionate, creative, cheerful, feminine</p>
	<p><i>Massive Face Type:</i> rugged</p>	<p>Masculine, strong, rugged, independent, rough, strong</p>
	<p><i>Classic-feminine Face Type:</i> sincere, exciting, competent, sophisticated</p>	<p>Authentic, down-to-earth, reliable, young, competent, honest, up-to-date</p>
	<p><i>Handsome Face Type</i> ?</p>	<p>Rugged, powerful, distinctive, dynamic, young, exciting</p>

Source: author's selection

4. Testing the Boost Effects: Psychological and Neural Mechanisms in How Faces Impact Brand Personality Trait Impressions

Results of Study IV, however, suggest that brand managers can enhance the perception of exciting, sophisticated, or competent brands by selecting a mismatching face when faces and brands are presented sequentially (contrast boost effect). The fact that consumers respond to high-contrast stimuli (face-brand mismatch) more favorably than to low-contrast ones (face-brand match) is especially important for print advertisements⁷⁹ and TV commercials which promote brands by first displaying the face followed by the brand. Moreover, when marketers select attractive mismatching faces, personality trait inferences are only enhanced in case of sophisticated brands. Managers need to pay attention to consumers with a strong emotional bond to sophisticated and competent brands because consumers highly attached to those brands do not forgive mismatching pairs of faces and brands. Contrary to Study III, mismatching endorser faces and brands displayed sequentially did not extend to purchase intention which clearly limits the implementation of the contrast boost effect.

Given these findings, in case of a one-page print advertisement or TV commercial, it is advisable for managers of sophisticated, exciting, or competent brands to focus their marketing communications directly on selecting endorser faces matching their brands instead of looking only for attractive and similar faces. This can result in higher emotional processing and, in turn, might lead to brand choice. In summary, by choosing appropriate faces, managers can benefit from the boost effects and enhance the perception of their brands. As such, this research reinforces the importance of judiciously selecting faces for brands to maximize the effectiveness of endorsements.

4.5.3 Research Limitations and Future Directions

While the author believes that the findings offer several valuable insights into the relations between faces and brands that provide highly relevant implications for researchers and practitioners, limitations of the studies should also be mentioned.

First, it should be noted that ten types of holistic faces may not be collectively exhaustive, and that other sources may exist for stimulating more specific brand impressions such as grooming or facial expressions. Moreover, ethnicity (refers to ethnicity of endorser and respondent) was completely excluded although it has been shown to influence consumer responses through mechanisms similar to the self-similarity effect included in the research (Golby et al. 2001). Advertisements activating specific source cues that are associated with a

⁷⁹ Under the condition that consumers do not turn back to the previous page displaying the endorser.

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cultural group are closely linked to the self and lead to self-referential processing that, in turn, enhances attitudes toward advertisements (Brumbaugh 2002). Of particular interest is the increasing cultural diversity within Germany where the largest group of immigrants is represented by Turkish people. This consumer group offers companies more than a niche market segment with 17 billion Euros of net purchasing power each year. The critical question is whether the Turkish respond to advertisements in the same way as Germans do because differences in looks and values within the cultures might thus translate into a variety of differences in consumer perception of endorser faces as well. Therefore, the present study could be extended by integrating endorser types with different cultural backgrounds.

Second, self-similarity was suggested as an alternative explanation moderating the assimilation and contrast boost effect. However, this was only confirmed for the assimilation boost effect. One possible reason might be that respondents had too short exposure time and could not experience the effect of similarity that might have occurred. To control this, stimuli presentation could be timed at 15 seconds in order to ensure same exposure times for all respondents and increase respondents' attention given that time limit. Therefore, additional research is necessary to explore the impact of time duration on self-similarity assessment. In another study self-similarity could be measured through other factors or manipulated by creating morphed photos to better assess the impact on brand personality impressions.

Third, the research only focused on three brand personality traits. However, a brand consists of multiple personality traits such as humans do. A recent work identified gender dimensions of brand personality and the power of both dimensions in affecting brand-related consumer responses (Grohmann 2009). In the current research, the energy drink Red Bull might be perceived as high on masculinity, whereas Nivea might be evaluated high on femininity, and Aspirin might be associated with an androgynous brand personality (low on femininity and masculinity). These potential assignments of brand personality dimensions would cause differences in matching pairs (female vs. male) and in forming brand personality inferences. Therefore, future research should focus on more brand personality traits to be evaluated in order to create a more accurate match. Furthermore, the relationship between ruggedness and masculine features as well as sophistication and feminine features has to be explored in future studies.

Fourth, personality trait inferences were examined only for a limited set of brands which were carefully selected to possess distinct personalities. The finding that face attractiveness and self-similarity do not enhance brand personality uniformly across traits suggests a possible moderating role of product category or product involvement. Product involvement has been

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shown to impact the routes to persuasion and should be included in the future (Petty, Cacioppo, and Schumann 1983).

Fifth, faces and brands were only visually paired without any other advertising messages. To create an advertisement closer to reality future research could integrate a headline and a brief line of copy with brand message or any background information of the endorser (cf., Till and Busler 2000).

Sixth, in the presented research settings, no control group was included which might have strengthened the relevance of endorsers. In a new study, another group of participants should rate brand personality only with the brand logo displayed; the presentation of endorsers should be excluded in order to have a baseline to compare both matching and mismatching endorser faces (cf., Batra and Homer 2004). This would also be quite interesting to be examined on a neuroscientific level using fMRI to better highlight the additional value of endorsers; however in Study V the neutral stimuli worked as the baseline.

Seventh, according to the literature on source effects (section 3.2.4.1) credible endorsers result in more favorable brand evaluations. Therefore, endorser credibility should be measured additionally in future research.

Eighthly, studies show that consumers use brand personality dimension to express an important dimension of their self-concept (see section 3.1.3). These findings suggest that consumer's personality traits should be included in future. Moreover, susceptibility to normative influence was shown to regulate consumer's main focus on endorsers or product attributes and thus should be measured in the next study (Martin, Wentzel, and Tomczak 2008). Further, to shed more lights on the mixed findings for face attractiveness another scale could be included which measures consumer's self-perceived attractiveness and the need to compare him/herself with others.

And finally, all samples consisted primarily of students. As a matter of fact, students do not represent the only interesting group being exposed to advertisement; however, due to their potential financial power in the future, they are highly important for brand strategies. The limitation to a convenience sample should be substituted through more representative samples in order to generalize the research findings.

5. Summary

A human face reveals a wide range of information to the observer. It can tell about the mood, and intention, but it can also serve as a cue for the characterization of a person. In order to describe a person there are other means apart from the face which include voice, body shape, clothing style. Nevertheless, “a face is the most distinctive and widely used key to a person’s identity” (Bruce and Young 1986, p. 305). People judge others by spontaneously inferring personality traits from faces. Judging others’ faces is essential not only in people’s daily lives and social interactions, but also when they are exposed to any type of advertisement. Print, TV, or online advertisements usually display endorsers promoting the brands that have to be appropriately selected. Consumers, then, often form personality impressions about a brand based on endorser characteristics such as faces. Integrating Gestalt psychology, face perception, and endorsement with perceptual priming theories, five studies examine how endorser faces impact brand impressions. The results from the conducted five studies provide convergent validity regarding the unique relationship between human faces and personality trait inferences from endorsed brands. This dissertation shows that (1) holistic types of faces emerge from combinations of anatomical facial features; (2) holistic face types reliably and differentially convey a strategically valuable set of personality trait impressions; (3) personality inferences are boosted by matching faces in joint presentation (assimilation boost effect), and (4) by mismatching faces in sequential presentation (contrast boost effect); while both boost effects are largely independent from face attractiveness and self-similarity, the assimilation boost effect is moderated by emotional attachment to a brand; and (5) the assimilation boost effect, not the contrast boost effect, is associated with a brain region that emotionally triggers brand choice. A summary of these studies is given in the following:

Study I aimed to identify holistic types of faces rooted in unique combinations of anatomical facial features. The experimental design follows established methods previously used and employed in marketing research. First, an initial list of facial features was created from an extensive literature research. By integrating inputs from professionals (face experts) this list was updated and resulted in a list of 112 facial elements. These features were the basis for identifying holistic face types and underlying factors. Second, such faces had to be selected that were representative of the variation in all facial features (i.e., faces scoring high and low on a specific element). A total of 165 faces (Caucasian faces, 20-45 years old) were chosen from a database specially generated for face research. High attention was paid to the images

that required uniform backgrounds and neutral face expressions. Third, professionals (N=50) rated faces based on the facial features. Scores were then aggregated at the stimulus level (one mean score for each facial feature) and analysis was conducted using these averaged scores. Fourth, an exploratory factor analysis with Varimax rotation for identifying facial factors instrumental in differentiating the holistic face types was performed resulting in 18 facial factors and seven single-item factors. Finally, cluster analysis and t-tests were employed to determine which facial factors significantly differentiate clusters.

Analyses provided ten holistic face types that are briefly described: The *Soft* type (16 female, one male) exhibits pronounced eyelashes, soft outline, full and colorful lips, curved eyebrows, and smooth skin. *Hermaphrodite* faces (8 female, 15 male) possess full lips, light skin, straight eyebrows, and other soft masculine features. The *Muted* type represents the smallest group (3 female, one male) differentiated by a general lack of prominent features. *Expressive* faces (all female, N=17) possess a multitude of outstanding characteristics such as pronounced eyelashes, full face outlines and lips, prominent eyes, full and well-colored lips, and curved eyebrows. The *High-contrast* type (14 female, one male) achieves differentiation through darker complexion, pronounced forehead, and irregular skin. *Weathered* faces (2 female, 15 male) have more prominent ears, forehead, and larger noses, low symmetry, irregular skin, disproportionally large upper or lower lips, low femininity, and straight eyebrows. *Classic-feminine* faces (all female, N=16) exhibit prominent eyelashes, round outlines, high color contrasts, prominent eyes, high symmetry, conspicuous lips, delicate noses, small ears, and prominent cheekbones. *Handsome* faces (all male, N=27) include strong eyelashes, darker skin, larger ears, full lips, prominent eyes, and a lack of symmetry. *Determined* faces (one female, 8 male) exhibit strong face outlines, traces of age, low symmetry, and darker skin, and the last type, *Massive* faces (all male, N=14), is formed based on pronounced traces of aging, darker uneven skin, pronounced ears, eyebrow, forehead, and nose.

Study II builds on the results of Study I by linking the previously identified holistic face types with consumer personality impressions to identify systematic relations. Specifically, Study II aimed to show that face types convey a strategically valued set of impressions, analogous to how consumers infer impressions from advertising and packages. Contrary to expert ratings in Study I, a survey was conducted in Study II in which consumers (N=165) were asked to rate ten randomly assigned faces (5 males, 5 females). Again, an analysis was carried out at the

stimulus level. To show that generic holistic face types are associated with generalizable responses, an ANOVA was performed.

Results indicated systematic relationships between holistic face types and personality trait impression as well as likeability. *Soft*, *Classic-feminine*, and *Expressive* face types elicited all above-average ratings on sincerity, excitement (except *Expressive* face type), sophistication, and competence (except *Soft* face type). Both, *Soft* and *Classic-feminine* face types were perceived low on ruggedness. The others including *Weathered*, *Massive*, and *Determined* face types were on average more often associated with lower personality scores than higher personality scores. However, they were rated high on ruggedness. *Handsome* and *Muted* face types were ranked according to some personality traits above and in others below-average whereas *Hermaphrodite* and *High-contrast* face types are more average ranked. Results identified a relationship between ruggedness and masculine features as well as sophistication and feminine features; this needs to be investigated in future research.

Further, results of likeability ratings indicated that the *Soft*, *Expressive*, and *Classic-feminine* type of faces were associated with high likeability. The other types including the *Hermaphrodite*, *Muted*, *Weathered*, *Determined*, and *Massive* face types generated low likeability ratings. This pattern follows basically the positive and negative personality rankings attached to the specific face types.

Overall, the results of Study I and II provide the desired empirical support for holistic face types which are rooted in unique combinations of facial features and convey a strategically valued set of personality impressions. Associations between types of faces and the resulting personality trait impressions are distinctive, highlighting the holistic face types that firms, managers, and agencies should consider for achieving specific responses.

Study III and IV build on the obtained results from previous Studies I and II. More precisely, Study III tests the assimilation boost effect which assumes that brand personality impressions are boosted when matching rather than mismatching combinations of faces and brands are presented simultaneously. In contrast, Study IV tests the contrast boost effect which claims that brand personality is boosted when mismatching rather than matching faces precede brands in a sequential exposure. Specifically, Study III and IV are an extension of earlier studies on match-up effects that assessed match-up dimensions of attractiveness and expertise by integrating personality traits as the new match-up factor. Furthermore, important variables such as attractiveness, self-similarity with the endorser, and emotional attachment to the brand were included as alternative explanations that were suggested to moderate the proposed

relationships. To assess the match and mismatch, brand personality and endorser personality dimensions were manipulated. Brand personality was particularly selected as a match-up dimension, because it represents the key concept of brand equity and is of high relevance for consumers.

First, stimuli (i.e., brands and faces) had to be selected that were used in both studies. Nivea was selected as a highly sophisticated brand, Red Bull was chosen as the exciting brand, and Aspirin was selected as the competent brand. Faces were included that exhibit highest scores on the selected personality dimensions from the set of holistic face types. Faces belonging to the category of *Weathered* (highest on competence ratings), *Classic-feminine* (highest on sophistication ratings), and *Handsome* (highest on excitement ratings) types were selected. As a result, pairs of matching and mismatching faces and brands based on their personalities were obtained and visually paired.

Participants in Study III were 369 respondents and viewed both, the face and the brand, which appeared simultaneously on a single slide. Participants in Study IV were another 120 respondents who viewed both, faces and brands, which were presented sequentially. To ensure the success of both the studies, participants were instructed to think of endorser's personality; further, in Study IV they were not allowed to go back to the previous slide. In both studies, participants had to complete questions on face attractiveness, self-similarity, brand personality, emotional attachment, perceived match between face and brand, and purchase intention among others.

Findings from Study III supported the hypothesized assimilation boost effect indicating that exciting, sophisticated, or competent brands presented simultaneously with matching endorsers can strengthen brand personality impressions. Results on the alternative variables were somewhat mixed. A greater self-similarity with the endorser and attractive faces enhanced brand personality for some traits but had no effect on others. However, emotional attachment to the brand was shown to increase the effect of matching faces on personality impressions, and, thus it was identified as a moderator of the assimilation boost effect. Furthermore, findings clearly demonstrated that endorsers and brands matching on salient personality traits led to higher purchase intention.

In addition, results from Study IV provided support for the contrast boost effect indicating that preceding exciting, sophisticated, or competent brands with mismatching endorser faces enhance brand personality trait inferences. Testing the influence of alternative variables on the boost effect again led to mixed results: Emotional attachment to the brand weakened the contrast boost effect only for sophisticated and competent brands, face attractiveness

enhanced the boost effect only for sophisticated brands, and self-similarity did not play a significant role at all. Further, the contrast boost effect did not extend to purchase intention.

Study V examines potential mechanisms responsible for differences found in Study III and IV. Moreover, Study V was conducted in order to shed more light on the finding that the assimilation boost effect extended to purchase intention whereas the contrast boost effect did not. Utilizing functional magnetic resonance imaging (fMRI), Study V suggests that the previously identified boost effects in Study III and IV relate to differences in brain activations and choice behavior. More precisely, Study V hypothesized that the assimilation boost effect and therefore the simultaneous presentation of brands and endorser faces activates brain areas (belonging to the limbic system) that are known to be important for processing emotional information. The engagement of emotions has been found to be an important factor of choice and behavior.

Subjects were 22 male respondents who participated in a neuroimaging experiment, utilizing fMRI. They spent approximately 60 minutes inside the scanner. Data were collected on both, the neural and behavioral level. For this purpose, a choice task was created with specific software compatible with the scanner. Moreover, it was exclusively designed for the current research and represents basically a replication of the experimental set up of Study III and IV. The choice task consisted of two blocks including different images of brands endorsed by matching and mismatching endorser faces. Subjects viewed brands and faces simultaneously in the first block and then had to choose or reject brands by pressing one of the two buttons on a response box for either “yes” or “no”. During the second block, subjects viewed brands and faces sequentially and again they had to make their choices (yes/no).

Findings clearly provided evidence for the hypothesis by identifying different brain areas involved when matching stimuli were presented simultaneously and mismatching stimuli sequentially. Brain data showed that the simultaneous presentation of matching faces and brands was associated with a brain region of the limbic lobe—the cingulate gyrus—that is engaged in the development and processing of emotions. However, this brain region was not found to be active when faces and brands were displayed sequentially. Moreover, less activation was found in an area of the prefrontal cortex—the superior frontal gyrus—when brands and mismatching faces were presented sequentially. This brain region has been related to increased response inhibition and would imply that subjects were inhibited from choosing a brand when a mismatching face preceded the brand, and were less inhibited when a matching face preceded the brand. Behavioral data (counting number of “yes” and “no” choices) were

5. Summary

assessed and clearly showed that subjects chose brands more often when endorser faces and brands were matching rather than mismatching independent of the mode of exposure. This finding further agrees on the brain data results: the assimilation boost effect is found to have a neural basis, namely an increased activation of a brain area related to emotional experiences that might explain why simultaneous presentation led to choice. A summary of all studies can be found in table 22.

5. Summary

Table 22: Summary of Studies I-V

	Study I	Study II	Study III	Study IV	Study V
Focus	<i>Holistic Face Types</i>	<i>Personality Trait Inferences from Holistic Face Types</i>	Testing the <i>Assimilation Boost Effect</i> : presenting brands side by side with matching faces enhances brand personality inferences; Testing alternative explanations	Testing the <i>Contrast Boost Effect</i> : presenting first the mismatching face and then the brand enhances brand personality inferences; Testing alternative explanations	<i>Neural Correlates of the Boost Effects</i>
Stimuli	Faces	Faces	Faces and brands	Faces and brands	Faces and brands
Method	Psychological measurement (expert ratings; N=60)	Psychological measurement (student sample; N=165)	Psychological measurement (student sample; N=160 pre-test; N=369 main study)	Psychological measurement (student sample, N=120)	Behavioral and fMRI experiment (student sample, N=22)
Mode of Exposure	Faces in isolation	Faces in isolation	Simultaneous presentation of faces and brands	Sequential presentation faces and brands	Simultaneous and sequential presentation faces and brands
Key Findings	Identification of ten <i>Holistic Face Types</i> : Soft, Hermaphrodite, Muted, Expressive, High-contrast, Weathered, Classic-feminine, Handsome, Determined, and Massive.	Systematic relationships between <i>Holistic Face Types</i> and strategically valuable <i>Personality Traits</i>	1) Identification of the <i>Assimilation Boost Effect</i> 2) No clear pattern for effects of face attractiveness and self-similarity 3) Emotional attachment to the brand strengthens Assimilation Boost Effect for all personality traits 4) Purchase intentions higher in the matching condition (Assimilation Boost Effect extends to purchase intention)	1) Identification of the <i>Contrast Boost Effect</i> 2) No clear pattern for effects of face attractiveness and self-similarity 3) Emotional attachment to the brand weakens the Contrast Boost Effect for sophisticated and competent brands 4) Purchase intentions higher in the matching condition (Contrast Boost Effect does not extend to purchase intention)	1) The simultaneous presentation of matching faces and brands recruits a brain region, the <i>Cingulate Gyrus</i> , which is engaged in the development and processing of emotion (not found for sequential presentation). This activation might have led to choice. 2) The sequential presentation of mismatching faces and brands recruits a brain region, the <i>Superior Frontal Gyrus</i> , which is engaged in processes of increased response inhibition. This activation did not lead to choice.

Source: author's own composition

6. German Summary

Persönlichkeitstransfer von Menschen auf Marken: Psychologische und neuronale Mechanismen

Werbetreibende sind für die adäquate Inszenierung ihrer Marken permanent auf der Suche nach neuen Gesichtern, sei es für Print-, TV- oder für Online-Anzeigen. Neuerdings suchen Unternehmen immer wieder „das Gesicht“ für ihre Kampagne und starten hierfür einen öffentlichen Aufruf (z.B. Audi und Beiersdorf). Um Verbrauchern die angestrebte Markenpersönlichkeit zu vermitteln, spielt die Auswahl geeigneter Gesichter für die Kommunikationskampagnen eine essenzielle Rolle. Das Gesicht soll der Marke buchstäblich „ein Gesicht geben“, d.h. durch Image- und Persönlichkeitstranfereneffekte wird die Marke emotional gestärkt und somit die Glaubwürdigkeit der Werbebotschaft erhöht. Bisherige Forschungen zeigen, dass, wenn Marke und Gesicht zueinander passen, führt dies bei Verbrauchern zu einer positiven Markenwahrnehmung, besseren Markenerinnerung und letztendlich zur Markenbindung. Daher ist die Herausforderung eines jeden Markenmanagers das Gesicht zu finden, welches die Markenphilosophie und die Markenpersönlichkeit optimal widerspiegelt. Diese Aufgabe wurde im Rahmen dieser Dissertation in fünf aufeinander aufbauenden Studien mit unterschiedlichen Methoden näher untersucht. Die Ergebnisse der Studien ermittelten (1) ganzheitliche oder sogenannte holistische Gesichtertypen, die anhand einer Kombination von Gesichtsfaktoren (bestehend aus Merkmalen) beschrieben wurden, (2) systematische Zusammenhänge zwischen den holistischen Gesichtertypen und Persönlichkeitseigenschaften, (3) eine gestärkte Markenwahrnehmung, wenn passende Gesichter gleichzeitig mit Marken präsentiert werden (Assimilation Boost-Effekt), (4) eine gestärkte Markenwahrnehmung, wenn unpassende Gesichter mit Marken nacheinander präsentiert werden (Kontrast Boost-Effekt), (5) dass die Boost-Effekte größtenteils unabhängig von Attraktivität und Selbstähnlichkeit sind, während der Assimilation Boost-Effekt durch die emotionale Markenbindung moderiert wird und (6) dass der Assimilation Boost-Effekt jene Gehirnregionen aktiviert, die Emotionen verarbeiten und letztendlich zur Markenwahl führte. Im Folgenden werden die fünf Studien kurz zusammengefasst:

Das Ziel von Studie I war es, holistische Gesichtertypen zu identifizieren. Diese Typen wiederum sollten durch bestimmte Gesichtermerkmale beschrieben werden, die zuvor zu Faktoren zusammengefasst wurden. Die Vorgehensweise entsprach einer bereits vielfach angewendeten und etablierten Herangehensweise in der Marketingforschung. Auf der

Grundlage von Literaturrecherchen wurde zuerst eine Liste von verschiedenen Gesichtermerkmalen zusammengestellt, die anschließend durch Expertengespräche ergänzt wurden. Die Expertengruppe bestand z.B. aus Kosmetikern, Fotografen, Models, Kreativen aus Modelagenturen und Produktmanagern. Insgesamt umfasste die finale Liste 112 Gesichterelemente, wobei diese als Grundlage für die Gesichterfaktoren und -typen dienten. Für Untersuchungen mit Gesichtern gibt es spezielle Datenbanken, die zur Nutzung lizenzfreies Bildmaterial zur Verfügung stellen. Aus diesen wurden insgesamt 165 kaukasische Gesichter mit neutralem Gesichtsausdruck gewählt. Hier wurde besonders darauf geachtet, dass die Bilder einen einheitlichen Hintergrund haben und aus derselben Perspektive aufgenommen worden sind. Anschließend bewerteten 50 Experten diese Gesichter anhand der in der Liste aufgestellten Merkmale. Diese Bewertungen wurden daraufhin auf Stimulusebene aggregiert (ein Mittelwert pro Gesichtermerkmal) und basierend auf den Mittelwerten weiter analysiert. Die explorative Faktorenanalyse (mit Varimax Rotation) lieferte insgesamt 18 Gesichterfaktoren und sieben 1-Item-Faktoren. Mittels hierarchischer Clusteranalyse (Gesichterfaktoren als Grundlage für das Clustering; Ward Methode als Fusionierungsalgorithmus) wurden holistische Gesichtertypen identifiziert. Desweiteren zeigten T-Tests, welche der Gesichterfaktoren signifikant unter- oder überdurchschnittlich in den Clustern ausgeprägt waren. Aus der Analyse der Daten resultierten zehn Cluster, also holistische Gesichtertypen, die nachfolgend kurz zusammengefasst werden: Der „*Soft*“ Typ (16 weiblich, einer männlich) ist gekennzeichnet durch überdurchschnittlich stark ausgeprägte Wimpern, weiche Gesichtszüge und ein fülliges Gesicht, volle und rote Lippen, kurvige Augenbrauen und eine sanfte, natürliche Haut. Insgesamt sind diese Gesichter einem weichen, femininen, natürlichen Typen zuzuordnen und weisen Gesichtszüge eines „*Babyfaces*“ auf. Gesichter, die dem „*Hermaphrodite*“ Gesichtertyp (8 weiblich, 15 männlich) zuzuschreiben sind, weisen einerseits weiche männliche Merkmale wie z.B. volle Lippen und helle Haut und andererseits überdurchschnittlich stark ausgeprägte und gerade Augenbrauen. Der Gesichtertyp „*Muted*“ stellt das kleinste Cluster dar (3 weiblich, einer männlich). Diese Gruppe verfügt nur vereinzelt über stark ausgeprägte Gesichtermerkmale. Das vierte Cluster „*Expressive*“ (alle weiblich, N=17) umfasst Gesichter, die besonders viele überdurchschnittlich stark ausgeprägte Merkmale aufzeigen, z.B. ein fülliges Gesicht und weiche Gesichtszüge, volle und rote Lippen, große Augen, geschwungene Augenbrauen sowie volles Haar. Zusätzlich umfasst dieses Cluster Gesichter mit einem sowohl unterdurchschnittlich ausgeprägten maskulinen als auch kindlichen Erscheinungsbild. Diese Gesichter können insgesamt als ausdrucksstarke und feminine Typen beschrieben werden. Der „*High-contrast*“ Typ (14

weiblich, einer männlich) definiert sich durch eine überdurchschnittlich dunkle Hautfarbe, unebene Hautstruktur und ausgesprochen auffallende Stirn. Gleichzeitig sind Gesichter in diesem Cluster durch ein kindliches Erscheinungsbild gekennzeichnet. Insgesamt können diese Gesichter als lebendig und kontrastreich charakterisiert werden. Der sechste Gesichtertyp „*Weathered*“ (2 weiblich, 15 männlich) weist überdurchschnittlich ausgeprägte Ohren, eine auffallend hohe Stirn und unreine, weniger natürliche Haut, gerade Augenbrauen sowie eine große Nase und Ober- oder Unterlippe. Desweiteren werden diese Gesichter als asymmetrisch und kaum feminin beschrieben. Dieser Typ wird als robust, resistent und stark bezeichnet. Überdurchschnittlich ausgeprägte Merkmale, z.B. ausdrucksstarke Wimpern, runde Gesichtszüge, Symmetrie, volles Haar, rote Lippen sowie starke Wangenknochen, eine reine und natürliche Haut, kleine Nase und Ohren zeigt das Cluster „*Classic-femine*“ (alle weiblich, N=16). Diese Gesichter sind zusätzlich durch ein stark feminines Erscheinungsbild gekennzeichnet. Kurz gesagt, lassen sich diese Gesichter einem sehr femininen, natürlichen, grazilen und zartem Typen zuschreiben. Der „*Handsome*“ Typ (nur männlich, N=27) stellt das größte Cluster dar und besteht aus Gesichtern mit überdurchschnittlich ausgeprägten Wimpern, dunkler Haut, vollen Lippen, großen Ohren sowie Augen und geraden Augenbrauen. Diese Gesichter werden ebenfalls am Maskulinsten wahrgenommen und repräsentieren insgesamt einen jungen, dynamischen, sinnlichen und sehr männlichen Typen. Der Gesichtertyp „*Determined*“ (eine weiblich, 8 männlich), besitzt überdurchschnittlich stark ausgeprägte Gesichtszüge, hohe Stirn und dunkle Haut. Desweiteren zeigen diese asymmetrischen Gesichter altersbedingte Merkmale, so dass dieser Typ mittleren Alters als entschlossen und kraftvoll beschrieben werden kann. Das letzte Cluster „*Massive*“ (alle männlich, N=14) besteht aus Gesichtern höheren Alters und wird charakterisiert durch eine überdurchschnittlich ausgeprägte hohe Stirn sowie starke Gesichtsbehaarung, eine große Nase und Ohren und eine dunkle unreine Haut. Weniger Haare und ein stark maskulines Erscheinungsbild sind weitere Merkmale dieses robusten Gesichtertyps.

Studie II baute auf den Ergebnissen der ersten Studie und zielte darauf ab, diesen holistischen Gesichtertypen ausgewählte Persönlichkeitseigenschaften (Aufrichtigkeit, Kompetenz, Spannung/Aufregung, Robustheit, Kultiviertheit) systematisch zuzuordnen. Anders als in der ersten Studie, wurden in Studie II Studenten befragt (N=165), die jeweils fünf weibliche und männliche Gesichter anhand von Eigenschaften und Sympathie bewerteten. Die univariate Varianzanalysen identifizierten im Ergebnis systematische Zusammenhänge zwischen den zehn Gesichtertypen und den fünf Persönlichkeitseigenschaften sowie Sympathiebewertung.

Die Gesichtertypen *Soft*, *Classic-feminine* und *Expressive* wurden überdurchschnittlich aufrichtig, kultiviert, aufregend (außer *Expressive*) und kompetent (außer *Classic-feminine*) bewertet. Ferner wurden beide Typen *Classic-feminine* und *Soft*, unterdurchschnittlich robust wahrgenommen. Die anderen Cluster einschließlich *Weathered*, *Massive* und *Determined* wurden im Durchschnitt als stark robust charakterisiert. Dahingegen wiesen die anderen Eigenschaften überwiegend unterdurchschnittliche Bewertungen auf. Die *Hermaphrodite* und *High-contrast* Gesichtertypen wurden bzgl. aller Persönlichkeitseigenschaften durchschnittlich eingestuft. Im Gegensatz dazu lieferten die *Handsome* und *Muted* Typen eher ein gemischtes Bild. Diese Ergebnisse zeigten eindeutig einen Zusammenhang zwischen Robustheit und maskulinen Gesichtertypen sowie Kultiviertheit und femininen Gesichtertypen aufmerksam. Desweiteren stellte sich heraus, dass die Gesichtertypen *Soft*, *Expressive* und *Classic-feminine* überdurchschnittlich sympathisch wahrgenommen wurden. Die übrigen Gesichtertypen wurden weniger sympathisch bewertet. Insgesamt geben die Ergebnisse von Studie I und II dem Management konkrete Richtlinien zur gezielten Auswahl von Gesichtertypen, um Verbrauchern eine angestrebte Markenpersönlichkeit zu vermitteln.

Studie III und IV nutzten die Ergebnisse der beiden ersten Studien und verfolgten das Ziel, den sogenannten Boost-Effekt zu prüfen. Dazu wurde speziell in Studie III der Assimilation Boost-Effekt und in Studie IV der Kontrast Boost-Effekt getestet. Dabei ist die Annahme beim Assimilation (Kontrast) Boost-Effekt, dass die Markenwahrnehmung durch ein passendes (unpassendes) Gesicht bei gleichzeitiger (sequenzieller) Präsentation mit der Marke verstärkt wird. Weitere wichtige Variablen (Gesicht: Attraktivität und Selbstähnlichkeit; Marke: emotionale Bindung) wurden dabei in den Studien berücksichtigt und als mögliche Moderatoren der Boost-Effekte untersucht. Ein Pre-Test ermittelte dazu geeignete Marken. Nivea wurde als kultivierte, Red Bull als aufregende und Aspirin als kompetente Marke gewählt. Die Gesichter, die mit überdurchschnittlich kultivierten (*Classic-feminine*), aufregenden (*Handsome*) und kompetenten (*Weathered*) Persönlichkeitseigenschaften assoziiert wurden, konnten jeweils direkt aus den Clustern übernommen werden. So wurden passende und unpassende Paare von Gesichtern und Marken hinsichtlich der Persönlichkeitseigenschaften gebildet. Probanden der Studie III (N=369) wurden das Gesicht und die Marke simultan auf einer Folie gezeigt. Hingegen wurden den Probanden in Studie VI (N=120) die Stimuli nacheinander präsentiert, zuerst das Gesicht und dann die Marke. Probanden beantworteten Fragen zum Gesicht (Attraktivität, Selbstähnlichkeit) und zur Marke (emotio-

nale Bindung, Markenpersönlichkeit, Kaufabsicht) und bewerteten die Übereinstimmung von Gesicht und Marke.

Die Ergebnisse der Studie III belegten, dass die Markenwahrnehmung von kultivierten, aufregenden und kompetenten Marken verstärkt werden kann, wenn das passende Gesicht gleichzeitig mit der Marke präsentiert wird (Assimilation Boost-Effekt). Die postulierten Einflüsse von Attraktivität und Selbstähnlichkeit auf die Boost-Effekte waren insgesamt eher gemischt. Hingegen zeigte sich, dass die emotionale Bindung zu Marken den Boost Effekt weiter stärkte. Zusätzlich führte die Übereinstimmung von Gesicht und Marke zu einer erhöhten Kaufabsicht. Die Analysen der Studie IV bestätigten, dass die Markenwahrnehmung von kultivierten, aufregenden und kompetenten Marken durch ein unpassendes Gesicht bei sequenzieller Präsentation mit der Marke verstärkt werden kann. Die Ergebnisse der Moderatoren waren auch in dieser Studie gemischt und lieferten kein eindeutiges Schema. Im Gegensatz zu Studie III hatte der Kontrast Boost-Effekt jedoch keinen Einfluss auf die Kaufabsicht. Insgesamt verdeutlichen diese Studien, dass Marketing Manager die Kommunikation der Markenpersönlichkeit durch die richtige Wahl von Werbeträgern und die Präsentationsweise stärken können.

Das Ziel der neurowissenschaftlichen Studie V war es, Hinweise für die unterschiedlichen Ergebnisse im Hinblick auf die Kaufabsicht der beiden Studien III und IV zu finden. Dabei wurde davon ausgegangen, dass beide Boost-Effekte unterschiedliche Gehirnregionen aktivieren. Insbesondere wurde vermutet, dass der Assimilation Boost-Effekt jene Gehirnregionen aktiviert, die für die Verarbeitung von Emotionen bekannt sind. Dazu haben Studien der Neurowissenschaften immer wieder gezeigt, dass Emotionen eine zentrale Rolle im neuronalen Prozess der Entscheidungsfindung spielen und ganz entscheidend das Verhalten beeinflussen können. An der Studie nahmen insgesamt 22 männliche Probanden teil, die ca. 60 Minuten ruhig in dem funktionellen Magnetresonanztomographen lagen. Neben neuronalen Daten wurden gleichzeitig Verhaltensdaten erhoben. Für diese Studie wurden die Marken und Gesichter aus Studie III und IV mit Hilfe einer speziellen Software (e-prime) in einen „task“ überführt und präsentiert werden. Dieser neu entwickelte „choice-task“ replizierte das Studiendesign der beiden vorangegangenen Studien. Die visuelle Präsentation der Stimuli wurde mit Hilfe eines Spiegels in die fMRT-Röhre geleitet, auf die dann der Proband über die Tasten einer Responsebox reagieren konnte. Während die Probanden eine Reihe von Marken und Gesichter (simultan und sequenziell) sahen, entschieden sie sich für („yes“) oder gegen („no“) die Marke. Insgesamt konnten bei jedem

Probanden 753 Bilder⁸⁰ des Gehirns aufgezeichnet werden, dessen Daten mittels einer geeigneten Software (BrainVoyager) vorbereitet und ausgewertet wurden. Die Analyse ermöglichte es herauszufinden, welche Gehirnregionen zu welcher Zeit (d.h. bei welcher Stimulusabfolge) aktiviert wurden. Die Ergebnisse zeigten, dass passende Gesichter-Marken Kombinationen bei simultaner Präsentation den *Gyrus cinguli* aktivieren. Diese Gehirnregion zählt zum limbischen System („Gefühlszentrum“), das für die Entwicklung und Verarbeitung von emotionalen Zuständen verantwortlich ist (Damasio et al. 1994). Darüber hinaus wird die Region des *Gyrus cinguli* mit einer Belohnungswahrnehmung assoziiert (Ullsperger und Von Cramon 2003) und ist dann aktiv, wenn Gefühle der Sicherheit vermittelt werden (Roth 2003; Häusel 2006). In diesem Fall könnte die gleichzeitige Präsentation des passenden Gesichtes mit der Marke ein positives Gefühl hervorrufen und mehr Sicherheit zur Markenwahl leisten. Bei der sequenziellen Präsentation von unpassenden Gesichtern und Marken zeigte sich, dass eine Abnahme der Aktivierung in einer Region im präfrontalen Kortex – superior frontal gyrus – die Folge war. Eine Aktivierung in dieser Region wurde bereits mit einer erhöhten Hemmungsreaktion assoziiert (Stuss et al. 2001), was wiederum bedeuten kann, dass die Probanden sich dem Kauf dieser Marke entzogen haben. Die Ergebnisse der Verhaltensdaten zeigten zusätzlich, dass passende Gesichter zu einer erhöhten Markenwahl führen, unabhängig von der Präsentationsweise (simultan oder sequenziell).

Insgesamt deuten diese Ergebnisse daraufhin, dass beim Assimilation Boost-Effekt Emotionen ausgelöst werden, die letztendlich zur Markenwahl führen können. Somit demonstriert diese Arbeit die hohe Bedeutung einer geeigneten Auswahl des Gesichtes für eine Marke und liefert dem Marketing Manager gezielte Hinweise zur Gesichterselektion und Präsentationsweise von Gesicht und Marke in Anzeigen.

⁸⁰ Das schließt nur den funktionellen Scan ein. Beim anatomischen Scan wurden weitere Bilder aufgenommen.

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Appendix A: Criteria Importance of Endorser Characteristics

	Mean	Std. Dev.
Celebrity-target audience match	4.65	.66
Celebrity-product/brand match	4.56	.69
Overall image of the celebrity	4.55	.65
Cost of acquiring the celebrity	4.34	.68
Celebrity trustworthiness	4.28	.74
The likelihood of acquiring the celebrity	4.17	.77
Celebrity controversy risk	4.13	.86
Celebrity familiarity	4.12	.79
Celebrity prior endorsements	4.07	.78
Celebrity likability	4.02	.89
Risk of celebrity overshadowing brands	3.91	1.00
The stage of celebrity life cycle	3.59	.96
Celebrity expertise	3.32	.97
Celebrity profession	3.10	.93
Celebrity physical attractiveness	3.09	.80
Celebrity equity membership status	2.98	1.10
Whether celebrity is a brand user	2.63	.83

Scores are obtained from a scale in which 5 = Very Important and 1 = Very Unimportant.

Source: Erdogan, Baker, and Tagg (2001), p. 44

Appendix B: Study I, Questionnaire Used by Face Experts

Gesicht Nr. (BITTE EINFÜGEN):

Gesichtsmerkmale		Skala							
Gesicht – Länge	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Gesicht – Breite an den Wangenknochen	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	breit
Gesicht – Breite am Mund	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	breit
Gesicht – Form I	rund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	eckig
Gesicht – Form II	oval	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dreieckig
Gesicht – Form III	flach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	tief
Gesicht – Symmetrie	symmetrisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	asymmetrisch
Gesicht – Umfang	pummelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	mager
Mittel-Gesicht – Länge ⁸¹	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Haut – Farbe	hell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dunkel
Haut – Farbe/Intensität	schwach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stark
Haut – Farbe/Natürlichkeit	natürlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	sonnengebräunt
Haut – Struktur	feinporig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	großporig
Haut – Reinheit	rein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unrein
Haut – Falten	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Haut – Leberflecke	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Haut – Sommersprossen	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Haut – Narben	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Haut – Warzen	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Stirn – Höhe	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Stirn – Wölbung	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt

⁸¹ Distanz Auge-Oberlippe

Appendix B: Study I, Questionnaire Used by Face Experts

Augen – Durchmesser	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Augen – Höhe	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Augen – Form	rund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	mandelförmig
Augen – Farbe I	einfarbig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	mehrfarbig
Augen – Farbe II	hell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dunkel
Augen – Neigung	abgeschrägt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	horizontal
Augen – Symmetrie	symmetrisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	asymmetrisch
Augen – Sitz in der Augenhöhle	vorstehend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	tiefliiegend
Augen – Abstand zwischen den Augen	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Augen – Position im Gesicht	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Augen – Abstand zu den Augenbrauen	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Augen – Abstand zum Mund	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Augen – Abstand zur Nase	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Augen – Krähenfüße	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Augen – Schlupflider	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Wimpern – Präsenz	sehr auffällig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	völlig unauffällig
Wimpern – Länge	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Wimpern – Form	gerade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	gebogen
Wimpern – Volumen	gering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	voll
Wimpern – Farb-Kontrast zum Haar	gering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stark
Augenbrauen – Höhe im Gesicht	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Augenbrauen – Länge	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Augenbrauen – Breite	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	weit
Augenbrauen – Farbe	hell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dunkel
Augenbrauen – Farb-Kontrast zum Haar	gering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stark
Augenbrauen – Fülle	karg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	buschig
Augenbrauen – Form	gerade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	gebogen
Augenbrauen – Neigung	nach innen abwärts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	nach außen abwärts
Augenbrauen – Abstand zwischen den Augenbrauen	keinen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	großen

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Wangen – Farbe	hell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dunkel
Wangen – Farb-Kontrast zum Gesicht	gering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stark
Wangen – Umfang	mager	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	pummelig
Wangen – Position im Gesicht I	innen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	außen
Wangen – Position im Gesicht II	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Wangen – Grübchen	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Wangen – Präsenz der Wangenknochen	sehr auffällig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	völlig unauffällig
Nase – Länge	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Nase – Breite	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	breit
Nase – Größe	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Nase – Weite der Nasenspitze	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	weit
Nase – Weite des Nasenlochs	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	weit
Nase – Form	knollig	<input type="radio"/>		stupsnasig	<input type="radio"/>		<input type="radio"/>		spitz
Nase – Richtung der Nasenspitze	aufwärts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	abwärts
Nase – Symmetrie	symmetrisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	asymmetrisch
Nase – Höcker	keinen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Nase – Abstand zum Mund	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Nase – Nasenhaare	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Lippen – Fülle der unteren Lippe	dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	voll
Lippen – Fülle der oberen Lippe	dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	voll
Lippen – Farbe	blass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dunkel
Lippen – Farb-Kontrast zum Gesicht	gering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stark
Lippen – Struktur	glatt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	faltig
Lippen – Symmetrie (vertikal)	symmetrisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	asymmetrisch
Lippen – Proportion obere/untere Lippen	untere Lippe unverhältnismäßig groß	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	obere Lippe unverhältnismäßig groß
Oberlippe - Kontur	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt

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Mund – Größe	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Mund – Position im Gesicht	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Mund – Richtung der Mundwinkel	aufwärts	<input type="radio"/>		neutral	<input type="radio"/>		<input type="radio"/>		abwärts
Kinn – Länge	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Kinn – Weite	schmal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	weit
Kinn – Form	rund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	eckig
Kinn – Doppelkinn	kein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Kinn – Grübchen	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Ohren – Präsenz	sehr auffällig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	völlig unauffällig
Ohren – Größe	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Ohren – Vertikale Position am Kopf	niedrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hoch
Ohren – Ohrläppchen	angewachsen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	frei
Ohren – Größe der Ohrläppchen	klein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	groß
Ohren – Segelohren	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Haar – Länge	kurz	<input type="radio"/>		mittel	<input type="radio"/>		<input type="radio"/>		lang
Haar – Struktur	glatt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	gelockt
Haar – Fülle	kahl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	voll
Haar – Farbe I	einfarbig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	bunt
Haar – Farbe II	hell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dunkel
Haar – Ergrauung	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	starke
Haar – Natürlichkeit	natürlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	gefärbt
Haar – Frisur	traditionell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	zeitgemäß
Haar – Geheimratsecken	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Haar – Haaransatz an der Stirn	gerade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	herzförmig
Haar – Scheitel	Mittelscheitel	<input type="radio"/>		kein	<input type="radio"/>		<input type="radio"/>		Seitenscheitel
Haar – Gesichtshaare	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Haar – Bart	kein	<input type="radio"/>		3-Tage Bart	<input type="radio"/>		<input type="radio"/>		Vollbart
Haar – Schnauzer	kein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	voll

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Hals – Länge	kurz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	lang
Hals – Form	zierlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	stämmig
Hals – Falten	keine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	viele
Hals – Adamsapfel	keinen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ausgeprägt
Gesamteindruck – Maskulines Gesicht	voll und ganz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	überhaupt nicht
Gesamteindruck – Feminines Gesicht	voll und ganz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	überhaupt nicht
Gesamteindruck – Babyface	voll und ganz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	überhaupt nicht
Gesamt - Konfiguration	Gesichtsmerkmale (Auge, Nase, Mund) alle eng beieinander	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Gesichtsmerkmale (Auge, Nase, Mund) alle weit auseinander

Appendix C: Study II, Questionnaire

Wahrnehmung von Gesichtern

Im Rahmen einer wissenschaftlichen Studie ohne kommerziellen Auftraggeber untersuchen wir, wie Konsumenten Gesichter wahrnehmen. Ihre Beteiligung ist eine wesentliche Voraussetzung für das Gelingen dieser Arbeit.

Sie bleiben anonym!

Ihre Antworten werden selbstverständlich vertraulich behandelt. Sie bleiben anonym und Ihre Antworten werden nicht zu kommerziellen Zwecken verwendet.

So funktioniert es:

Es werden Ihnen Fragen zu 8-12 Gesichtern gestellt. Das Ausfüllen des Fragebogens wird ca. 2-3 Minuten pro Gesicht in Anspruch nehmen.

Bitte beantworten Sie **alle** Fragen **so gut Sie können**. Es gibt keine richtigen oder falschen Antworten. Wir sind lediglich an **Ihrer** Meinung interessiert.

VIELEN DANK FÜR IHRE ZEIT UND HILFSBEREITSCHAFT!

Für weitere Informationen über diese Studie kontaktieren Sie bitte Yonca Limon per Telefon: (+49) 431 880 1413 oder E-Mail: ylimon@ae.uni-kiel.de. Adresse: Wilhelm-Seelig-Platz 6/7, D-24098 Kiel.

Fragen zu Gesicht X - Bitte ausschließlich für das vorgelegte Bild bewerten!

1. Welche Assoziationen fallen Ihnen spontan ein, wenn Sie dieses Gesicht betrachten? Assoziationen können Produktkategorien, bekannte Marken, Aktivitäten oder Anderes umfassen.

- | | |
|----------|----------|
| 1) _____ | 4) _____ |
| 2) _____ | 5) _____ |
| 3) _____ | 6) _____ |

2. Menschen können durch bestimmte Eigenschaften beschrieben werden. Sehen Sie sich dieses Gesicht genau an, und versuchen Sie, die Person anhand folgender Merkmalen zu beschreiben.

Die Person hinter diesem Gesicht erscheint mir...	Stimme voll und ganz zu	1	2	3	4	5	Stimme überhaupt nicht zu
...bodenständig.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...aufrichtig.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...gesund.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...fröhlich.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...wagemutig.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...lebendig.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...phantasievoll.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...zeitgemäß.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...verlässlich.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...vernünftig.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...erfolgreich.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...stilvoll.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...charmant.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...widerstandsfähig.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
...robust.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

2. Bitte beurteilen Sie anhand folgender Aussagen, was Sie empfinden, wenn Sie dieses Gesicht ansehen.

Diese Person...	1	2	3	4	5	6	7	
...ist gut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...ist schlecht.
...ist ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...ist abstoßend.
...mag ich sehr.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...mag ich überhaupt

3. Bitte geben Sie Ihr Alter und Ihr Geschlecht an: Ich bin Jahre alt und
 weiblich männlich

VIELEN DANK FÜR IHRE ZEIT UND HILFSBEREITSCHAFT!

Appendix D: Study III, Questionnaire

C	A	U	Christian-Albrechts-Universität zu Kiel	A&F Marketing
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Persönlichkeiten in Gesichtern und Marken

Im Rahmen einer wissenschaftlichen Studie ohne kommerziellen Auftraggeber untersuche ich, wie Konsumenten Gesichter und Marken wahrnehmen. Ihre Beteiligung ist eine wesentliche Voraussetzung für das Gelingen dieser Arbeit.

Sie bleiben anonym!

Ihre Antworten werden selbstverständlich vertraulich behandelt. Sie bleiben anonym und Ihre Antworten werden nicht zu kommerziellen Zwecken verwendet.

So funktioniert es:

Dieser Fragebogen besteht aus vier Abschnitten. Zunächst werden Ihnen Fragen zur Kombination von einem Gesicht und einer Marke gestellt. Im zweiten Teil folgen dann Fragen zu dem Gesicht, gefolgt von Fragen zur Marke im dritten Teil. Im vierten Teil schließen sich Fragen zur Ihrer eigenen Person an. Das Ausfüllen des Fragebogens wird ca. 8-10 Minuten in Anspruch nehmen.

Bitte beantworten Sie **alle** Fragen **so gut Sie können**. Es gibt keine richtigen oder falschen Antworten. Ich bin lediglich an **Ihrer** Meinung interessiert.

VIELEN DANK FÜR IHRE ZEIT UND HILFSBEREITSCHAFT!

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TEIL I: Fragen zu Gesicht und Marke - Bitte ausschließlich für die vorgelegten Bilder bewerten!

1. Stellen Sie sich vor, dass diese Person das neue „Gesicht“ der Marke ist. Bitte beurteilen Sie, wie gut dieses Gesicht zur Marke passt:

Übereinstimmung Gesicht – Marke	1	2	3	4	5	6	7	
Ungeeignet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Geeignet
Passt schlecht zueinander	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Passt gut zueinander
Ist überhaupt nicht abgestimmt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ist sehr gut abgestimmt

TEIL II: Fragen zu dem Gesicht

1. Wie bekannt ist Ihnen dieses Gesicht?

Dieses Gesicht ist mir...	1	2	3	4	5	6	7	
...bekannt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...unbekannt.

2. Wie finden Sie dieses Gesicht?

Dieses Gesicht...	1	2	3	4	5	6	7	
...ist gut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...ist schlecht.
...ist ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...ist abstoßend.
...mag ich sehr.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...mag ich überhaupt

3. Wie attraktiv ist, aus Ihrer Sicht, das vorliegende Gesicht?

Dieses Gesicht finde ich...	1	2	3	4	5	6	7	
...attraktiv.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...nicht attraktiv.
...ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...nicht ansprechend.
...schön.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...nicht schön.

TEIL III: Fragen zur Marke

1. Wie bekannt ist Ihnen diese Marke?

Diese Marke ist mir...	1	2	3	4	5	6	7	
...bekannt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...unbekannt.

2. Wie finden Sie die Marke?

Diese Marke...	1	2	3	4	5	6	7	
...ist gut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...ist schlecht.
...ist ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...ist abstoßend.
...mag ich sehr.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...mag ich überhaupt

3. Menschen können durch bestimmte Eigenschaften beschrieben werden. Stellen Sie sich vor, dass diese Marke ein Mensch wäre und durch entsprechende Eigenschaften beschrieben werden soll.

Bitte geben Sie an, inwieweit die folgenden Persönlichkeiten diese Marke beschreiben	Beschreibt extrem gut	1	2	3	4	5	Beschreibt überhaupt nicht
Zuverlässig		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Bodenständig		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Unverfälscht/Authentisch		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ehrlich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Temperamentvoll		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Fantasievoll		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Leidenschaftlich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Fröhlich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Modern		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Intelligent		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Erfolgreich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Vornehm		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Charmant		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wohlerzogen		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Robust		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Freiheitsliebend		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wagemutig		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

4. Wie verbunden fühlen Sie sich mit der Marke?

Emotionale Bindung	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Ich hänge sehr an der Marke.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich fühle mich mit der Marke sehr verbunden.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Zwischen mir und der Marke gibt es überhaupt keine gefühlsmäßige Verbindung.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

5. Wie würden Sie sich bei Ihrem nächsten Einkauf entscheiden?

Kaufabsicht	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Es ist sehr wahrscheinlich, dass ich diese Marke kaufen werde.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wenn ich das nächste Mal dieses Produkt brauche, werde ich diese Marke kaufen.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich werde diese Marke sicher einmal ausprobieren.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

TEIL IV: Fragen zu Ihrer eigenen Person

1. Wie schätzen Sie die Wirkung von Personen, die das Produkt vermarkten, in der Werbung auf Ihre eigene Kaufmotivation ein?

Für mich ist...	Wichtig	1	2	3	4	5	Unwichtig
Das Aussehen der Person		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Die Zielgruppe der Person		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Einklang zwischen Person und Produkt/Marke		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Die Modernität der Person		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

2. Würden Sie sagen, es besteht eine äußerliche Ähnlichkeit zwischen Ihnen und der Person, deren Gesicht Sie abgelenkt sehen?

Wahrnehmung - Ähnlichkeit	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Ich empfinde eine sehr große Ähnlichkeit zwischen dieser Person und mir.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich kann mich körperlich mit dieser Person identifizieren.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Diese Person ist wie ich.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

3. Glauben Sie, dass es Menschen gibt, die sich mit Gesichtern aus der Werbung vergleichen?

Vergleich mit Gesicht	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Ich denke, dass der größte Teil meiner Freunde sich mit dieser Person vergleichen		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wie wahrscheinlich ist es, dass sich eine „Durchschnittsperson“ mit dieser Person vergleicht.	Sehr wahrscheinlich	1	2	3	4	5	6	7	Sehr unwahrscheinlich
Wie wahrscheinlich ist es, dass Sie sich mit dieser Person vergleichen.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

4. Bitte geben Sie abschließend noch Ihr Alter und Ihr Geschlecht an: Ich bin Jahre alt und
 weiblich männlich

VIELEN DANK FÜR IHRE ZEIT UND HILFSBEREITSCHAFT!

Appendix E: Study IV, Questionnaire

C	A	U	Christian-Albrechts-Universität zu Kiel	A&F Marketing
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Persönlichkeiten in Gesichtern und Marken

Im Rahmen einer wissenschaftlichen Studie ohne kommerziellen Auftraggeber untersuche ich, wie Konsumenten Gesichter und Marken wahrnehmen. Ihre Beteiligung ist eine wesentliche Voraussetzung für das Gelingen dieser Arbeit.

Sie bleiben anonym!

Ihre Antworten werden selbstverständlich vertraulich behandelt. Sie bleiben anonym und Ihre Antworten werden nicht zu kommerziellen Zwecken verwendet.

So funktioniert es:

Dieser Fragebogen besteht aus drei Abschnitten. Zunächst werden Ihnen Fragen zu einem Gesicht gestellt, das ich Ihnen zeigen werde. Im zweiten Teil wird nach dem Eindruck von einer Marke gefragt, gefolgt von Fragen zu Gesicht und Marke im dritten Teil. Das Ausfüllen des Fragebogens wird ca. 5-7 Minuten in Anspruch nehmen.

Bitte beantworten Sie **alle** Fragen **so gut Sie können**. Es gibt keine richtigen oder falschen Antworten. Ich bin lediglich an **Ihrer** Meinung interessiert.

VIELEN DANK FÜR IHRE ZEIT UND HILFSBEREITSCHAFT!

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TEIL I: Fragen zu dem Gesicht

1. Wie bekannt ist Ihnen dieses Gesicht?

Dieses Gesicht ist mir...	1	2	3	4	5	6	7	
...bekannt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...unbekannt.

2. Wie attraktiv ist, aus Ihrer Sicht, das vorliegende Gesicht?

Dieses Gesicht finde ich...	1	2	3	4	5	6	7	
...attraktiv.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...nicht attraktiv.
...ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...nicht ansprechend.
...schön.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...nicht schön.

Marke einfügen

TEIL II: Fragen zu der Marke

1. Menschen können durch bestimmte Eigenschaften beschrieben werden. Stellen Sie sich vor, dass diese Marke ein Mensch wäre und durch entsprechende Eigenschaften beschrieben werden soll.

Bitte geben Sie an, inwieweit die folgenden Persönlichkeiten diese Marke beschreiben	Beschreibt extrem gut	1	2	3	4	5	Beschreibt überhaupt nicht
Zuverlässig		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Bodenständig		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Unverfälscht/Authentisch		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ehrlich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Temperamentvoll		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Fantasievoll		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Leidenschaftlich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Fröhlich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Modern		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Intelligent		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Erfolgreich		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Vornehm		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Charmant		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wohlerzogen		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Robust		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Freiheitsliebend		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wagemutig		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

2. Wie verbunden fühlen Sie sich mit der Marke?

Emotionale Bindung	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Ich hänge sehr an der Marke.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich fühle mich mit der Marke sehr verbunden.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Zwischen mir und der Marke gibt es überhaupt keine gefühlsmäßige Verbindung.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

TEIL III: Fragen zu Gesicht und Marke

1. Stellen Sie sich vor, dass diese Person das neue „Gesicht“ der Marke ist. Bitte beurteilen Sie, wie gut dieses Gesicht zur Marke passt:

Übereinstimmung Gesicht - Marke	1	2	3	4	5	6	7	
Ungeeignet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Geeignet
Passt schlecht zueinander	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Passt gut zueinander
Ist überhaupt nicht abgestimmt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ist sehr gut abgestimmt

2. Wie würden Sie sich bei Ihrem nächsten Einkauf entscheiden, wenn das gezeigte Gesicht das „neue Gesicht“ der Markenkampagne wäre?

Kaufabsicht	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Es ist sehr wahrscheinlich, dass ich diese Marke kaufen werde.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wenn ich das nächste Mal dieses Produkt brauche, werde ich diese Marke kaufen.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich werde diese Marke sicher einmal ausprobieren.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

TEIL IV: Fragen zu Ihrer eigenen Person

1. Würden Sie sagen, es besteht eine äußerliche Ähnlichkeit zwischen Ihnen und der Person, deren Gesicht Sie abgelenkt sehen?

Wahrnehmung - Ähnlichkeit	Stimme voll und ganz zu	1	2	3	4	5	6	7	Stimme überhaupt nicht zu
Ich empfinde eine sehr große Ähnlichkeit zwischen dieser Person und mir.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich kann mich körperlich mit dieser Person identifizieren.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Diese Person ist wie ich.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

2. Bitte geben Sie abschließend noch Ihr Alter und Ihr Geschlecht an: Ich bin Jahre alt und
 weiblich männlich

VIELEN DANK FÜR IHRE ZEIT UND HILFSBEREITSCHAFT!

Appendix F: Study V, Informed Consent Form and MRI Screening Form

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University of Southern California
Department of Psychology

INFORMED CONSENT FOR NON-MEDICAL RESEARCH

CONSENT TO PARTICIPATE IN RESEARCH

Emotion Induction and Decision Making: A Multi-Method Study Using Self-Report, Behavioral, and Neural Measures Preliminary

You are being asked to participate in a research study conducted by Drs. Martin Reimann and Antoine Bechara from the Department of Psychology at the University of Southern California. Your participation in this study is voluntary. You should read the information below, and ask questions about anything you do not understand, before deciding whether or not to participate. Please take as much time as you need to read the consent form. You may also decide to discuss it with your family or friends. If you decide to participate, you will be asked to sign this form. You will be given a copy of this form.

PURPOSE OF THE STUDY

We are asking you to participate in a study that focuses on decision-making. The purpose of the study is to induce specific emotions and have you make decisions. First, we examine the influence of feelings of "hope" and "hopefulness" when making financial investments. Similar to the first task, in the second task, we will show pictures of situations in which people spend time (e.g., going out to the movies, to a restaurant, or for a hike) versus situations in which people spend money (e.g., on rent, mortgage, food, or gas). Subsequently, you will be asked to engage in a donation task. That is, you will donate "virtual" money to a selection of charities (e.g., American Red Cross). In the third task, you will compare specific experiences such as comedy movies, dentists, or desserts to gambles. In the final task, we will present you human faces and selected brands; the latter, which you can choose. Finally, this study will also employ several questionnaires to assess the emotional differences in decisions made.

PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

You will be asked to read this consent form first. After you agree to participate by signing the form, we will involve in four different tasks as outlined above. All three tasks will take approximately between 1 and 1.5 hours.

Finally, you will fill out several questionnaires: In the Self-Assessment of Finances Questionnaire you will be asked questions regarding your personal economic knowledge and financial strategy, as well as any investment experience. Questions range from basic

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demographic information to your potential investment strategies in hypothetical situations. It will take approximately 20 minutes to complete this questionnaire. The Self-Report of Hope and Hopefulness is questionnaire asking questions on your baseline levels of hope, optimism, and relevant questions on current economic status. It will take approximately 10 minutes to complete this questionnaire. In sum, filling out the questionnaires will take about 30 minutes.

You will be instructed by trained personnel, either graduate students or supervised laboratory personnel. All parts of the study will be completed in the Hedco Neuroscience Building, Suite B26.

The total length of participation is anticipated to be approximately 2 hours.

POTENTIAL RISKS AND DISCOMFORTS

There are no anticipated risks involved in the tasks performed in this study. You do not have to answer any question that you do not want to answer.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

There are no direct benefits to you for participating in this study. The results from this experiment may help our empirical and scientific understanding of human decision-making.

PAYMENT/COMPENSATION FOR PARTICIPATION

If you are a Psychology Pool student, you will receive two hours of extra credit to the psychology course of your choice, which allows extra credit for participation in research studies.

If you are not in the Psychology Pool, you will receive \$10 per hour. Additionally, you will receive a part of your winnings (1%) on the financial decision making task (EIT). You will be given the money at the end of your participation. Whether or not you complete the study, you will be paid for the portion you have completed. For example, if you participate for an hour, you will be given \$10.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Your data will be coded, which means your name will not be on the data. You will never be identified by name in any written work resulting from this study. The consent form and any documents you complete will be kept separately.

Only members of the research team will have access to the data associated with this study. The data will be stored in the investigator's office in a locked file cabinet/password protected computer. The data will be stored for up to five years after the study has been completed and then destroyed. The data may be shared with other researchers; however your name or other identifying information will not be included. Your permission will not be sought, since the researchers will not have any way of identifying the data.

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PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study.

ALTERNATIVES TO PARTICIPATION

One alternative is to not participate. If you are a member of the psychology subject pool, you may earn credit by completing a different study. In addition, the professors may provide alternative bonus point earning activities for those who cannot participate (due to ill health or other limiting conditions) or for those who do not wish to participate in experiments. Please see your instructor or the Subject Pool supervisor for more information about these other options.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have any questions about your rights as a study subject or you would like to speak with someone independent of the research team to obtain answers to questions about the research, or in the event the research staff can not be reached, please contact the University Park IRB, Office of the Vice Provost for Research Advancement, Stonier Hall, Room 224a, Los Angeles, CA 90089-1146, (213) 821-5272 or upirb@usc.edu

IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact: Dr. Reimann, Principal Investigator, (213) 740-8528.

SIGNATURE OF SUBJECT

I have read (or someone has read to me) the information provided above. I have been given a chance to ask questions. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Subject

Signature of Subject

Date

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SIGNATURE OF INVESTIGATOR

I have explained the research to the subject, and answered all of their questions. I believe that the subject understands the information described in this document and freely consents to participate.

Name of Investigator

Signature of Investigator

Date

Study ID: UP-08-00343 Valid From: 4/3/2009 To: 2/4/2010

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Appendix F: Study V, Informed Consent Form and MRI Screening Form



MAGNETIC RESONANCE SCREENING FORM

Dana & David Dornsife Cognitive Neuroscience Imaging Center
 University of Southern California, Los Angeles, CA 90089
 Tel: (213) 740-2282, Fax: (213) 746-9082

For Office Use Only
 ID No.:

Date _____ / _____ / _____

Name _____ Height _____ Weight _____
Last name First name M.I.

Birthdate _____ Phone (H) (_____) (W) (_____) _____

Address _____ City _____

State _____ Zip _____ Emergency Contact Name _____ Phone _____

Physician's name & address _____ Phone _____

1. Have you ever had surgery or other invasive procedures? Yes No If yes, please list below.
 Type: _____ Date _____ / _____ / _____
 Type: _____ Date _____ / _____ / _____

2. Have you had any previous MRI studies? Yes No If yes, please list below.

Area of Body	Date	Facility Name & Location
_____	_____ / _____ / _____	_____
_____	_____ / _____ / _____	_____

3. Have you ever worked as a machinist, metal worker, or in any profession or hobby grinding metal? Yes No
 had an injury to the eye involving a metallic object (e.g. metallic slivers, shavings, or foreign body)? Yes No

4. Are you pregnant, possibly pregnant or breast feeding? Yes No

5. Do you have Sickle Cell Anemia or Thalassemia? Yes No

The MRI room contains a very strong magnet. Some metal objects can interfere with your scan or even be dangerous. Before you are allowed to enter, we must know if you have any metal in your body or have experienced any of the conditions listed below. Please check the correct answer from each of the following:

- | | |
|---|--|
| Yes No Cardiac pacemaker | Yes No Shrapnel, buckshot, or bullets |
| Yes No Implanted cardiac defibrillator | Yes No Tattooed eyeliner or eyebrows |
| Yes No Aneurysm clip or brain clip | Yes No Body piercing(s) |
| Yes No Carotid artery vascular clamp | Yes No Metal fragments (eye, head, ear, skin) |
| Yes No Neurostimulator | Yes No Internal pacing wires |
| Yes No Insulin or infusion pump | Yes No Aortic clips |
| Yes No Spinal fusion stimulator | Yes No Metal or wire mesh implants |
| Yes No Cochlear, otologic, ear tubes or ear implant | Yes No Wire sutures or surgical staples |
| Yes No Prosthesis (eye/orbital, penile, etc.) | Yes No Harrington rods (spine) |
| Yes No Implant held in place by a magnet | Yes No Bone/joint pin, screw, nail, wire, plate |
| Yes No Heart valve prosthesis | Yes No Wig, toupee, or hair implants |
| Yes No Artificial limb or joint | Yes No Hearing aid (<i>Remove before scan</i>) |
| Yes No Other implants in body or head | Yes No Dentures or retainers (<i>Remove before scan</i>) |
| Yes No Electrodes (on body, head or brain) | Yes No Asthma or breathing disorders |
| Yes No Intravascular stents, filters, or | Yes No Seizures or motion disorders |
| Yes No Shunt (spinal or intraventricular) | Yes No Hospitalization for mental or neurological illness |
| Yes No Vascular access port or catheters | Yes No Head Trauma |
| Yes No IUD or diaphragm | Yes No Migraine Headache |
| Yes No Transdermal delivery system or other types of foil patches (e.g. Nitro, Nicotine, Birth control, etc.) | Yes No Panic attack |
| | Yes No Stroke |

Please remove all metallic objects before MR examination including: keys, hair pins, barrettes, jewelry, watch, safety-pins, paperclips, money clip, credit cards, coins, pens, belt, metal buttons, pocket knife, & clothing with metal in the material. Ear protection is required during the MRI examination.

I attest that the above information is correct to the best of my knowledge. I have read and understand the entire contents of this form; and I have had the opportunity to ask questions regarding the information on this form.

Signature: _____ Date _____

Reviewed by: _____ Date _____

MM: Screening Form 05-18-04 rev

Curriculum Vitae

Yonca Limon

Born on 19th November 1981 in Neumünster, Germany

German

EDUCATION

04/2007 – 11/2010	Christian-Albrechts-University Kiel, Germany PhD., A&F Marketing
11/2010 – 11/2010	University of Southern Australia, SA, Australia Visiting Scholar, Ehrenberg-Bass Institute for Marketing Science
01/2009-04/2009	University of Southern California, CA, USA Visiting Scholar, Department of Psychology/Brain & Creativity Institute
08/2009-10/2009	University of Southern California, CA, USA Visiting Scholar, Department of Psychology/Brain & Creativity Institute
10/2001 - 03/2007	Christian-Albrechts-University Kiel, Germany Master in Business Administration, with Highest Honors (Dipl.-Kffr.) Bachelor in Business Administration (Vordiplom)
06/2006	Bologna University, Forli, Italy Summer School – Management in the Public Sector
08/2004-06/2005	University of Illinois at Urbana-Champaign, IL, USA Study Abroad – Business Administration and Economics
09/2003	Istanbul University, Turkey Summer School - Management

PUBLICATIONS

Orth, U., Limon, Y., and G. Rose (2010): “Store-Evoked Affect, Personalities, and Consumer Emotional Attachments to Brands”, *Journal of Business Research*, in press.

Limon, Y., Kahle L. and U. Orth (2009): "Package Design as a Communications Vehicle in Cross-Cultural Values Shopping", *Journal of International Marketing*, 17 (1), 30-57.

Orth, U. & Y. Limon (2009): Global versus Local Marketing. Published in the Series of the Agricultural and Nutritional Sciences, Christian-Albrechts-University Kiel, 114, 239-245.

Limon, Y. (2007): “Packaging from a Cross-Cultural Perspective”, *Trade Journal Eurotürk*, 19 (3), 39-40.

CONFERENCES

- 02/2010 **5th International Conference of the Academy of Wine Business Research**, Auckland, New Zealand:
“Consumer Metacognitions - The Ease, Speed, and Accuracy of Inferring Meaning from Wine Packages”
“Designing Wine Retail Interiors to Elicit Desirable Consumer Impressions”
- 01/2009 **59th Symposium Global Markets, Christian-Albrechts-University Kiel**, Germany:
„Global Marketing – Examples from Packaging Design“
- 10/2008 **NeuroPsychoEconomics Conference**, Munich, Germany:
„Faces and Brand Impressions – from a Neuroscientific Perspective“
- 01/2008 **AMS Cultural Perspectives in Marketing Science**, New Orleans, LA, USA:
„Cross-Cultural Evidence for Values Shopping and the Role of Package Design as a Communications Vehicle”
„Holistic Face Types and Consumer Brand Impressions across Cultures”

HONORS

- 11/2008 **Heinz-Wüstenberg-Foundation**
Research Grant for the Position as a Visiting Scholar at the University of Southern California, CA, USA
- 01/2008 **Academy of Marketing Science (AMS)**
Travel Grant Award for the AMS conference „Cross Cultural Perspectives in Marketing“, New Orleans, LA, USA
- 12/2006 **DAAD-Research Grant for Master Thesis**
Scholarship for Data Collection at the Koc University, Istanbul, Turkey
- 06/2006 **Bologna University, Forli, Italy**
Scholarship for the Summer School

TEACHING EXPERIENCE

- Sommer Term 2010 Marketing Communication (Master Level)
- Winter Term 09/10/11 Introduction to Marketing (Undergraduate - Second Year)
- Sommer Term 07/08/09 Personal Selling and Retail Management (Master Level)
- Winter Term 07/08/09 Cross-Cultural Marketing (Undergraduate - Fourth Year)