STEREOTYPE TRANSFER IN ADVERTISING: PROCESS AND MODERATORS

By

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Stereotype Transfer in Advertising: Process and Moderators

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As marketers more and more are acknowledging the diversity of the American marketplace by using non-standard ad models (Zmuda 2014), understanding the potential risks and benefits of these non-standard models becomes important. My research shows that by including models who are members of a stereotyped group in an advertisement, there may be unintended consequences in how the brand or product is perceived. In this dissertation, I find evidence to support the idea that stereotype associations activated by the use of stereotypical models transfer to advertised products, influencing the perceptions of brand personality and product attributes, and that this transfer is more likely to occur when people are not paying full attention to the advertisement. Together, three of the seven studies demonstrate a stereotype transfer effect from advertising model to brand personality and product attributes. The stereotype transfer effect is shown across multiple stereotypes: occupational stereotypes (businessperson and stay-at-home parent), math-related female stereotypes, and stereotypes of overweight women. The studies indicate that it is more likely to occur under conditions of high cognitive load, when less attention is paid to the advertisement, and explore two alternative explanations for the effect.

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CHAPTER 1

INTRODUCTION

Stereotypes guide judgments. They are a cognitive tool to make navigating the world easier. They can also have very negative effects, driving prejudice for example. Because of their important place in the world of social judgment and behavior, much research has been done on stereotypes and their effects.

A stereotype can be defined as a knowledge structure or a set of associations that encompass the personality traits, attitudes, behavioral tendencies, and expectations that are viewed as representative of a social group. The set of associations includes both the characteristics of the social group, and the characteristics that differentiate the group from other groups (Kawakami, Young & Dovidio 2002, Stangor 2009). In general, exposure to words associated with, and members or exemplars of a stereotyped group leads to activation of stereotypic associations, which in turn affects judgments, behaviors, attitudes, and goals. Stereotype activation has been shown to affect information processing and social perception, and the behaviors, attitudes, and goals of perceivers (Hamilton, Sherman & Ruvolo 1990, Pechmann & Knight 2002, Bargh, Chen & Burrows 1996, Campbell & Mohr 2011). In this dissertation, I examine whether stereotype-related associations transfer from advertising models who are members of stereotyped groups to associated stimuli. Marketers use unknown models as spokespeople in advertisements in part because they serve as a reference group for the average consumer. While a celebrity endorser creates an aspirational reference group, an unknown model can tell the consumers that the brand is for people like them. Surprisingly, while much research has been done on how active associations affect the perceiver, there is little to no literature that examines whether these active associations transfer to associated objects – for instance, products

in advertisements. It seems plausible that an advertisement featuring an advertising model who is a member of a stereotyped group may create an unintended transfer of stereotype associations to the advertised product.

BACKGROUND

Effects of Stereotypes on Information Processing and Social Perception

Stereotypes can affect information processing by affecting the initial encoding of information and the interpretation of new information (Hamilton, Sherman & Ruvolo 1990). Stereotypes provide a framework through which perceivers may interpret and encode ambiguous social behaviors. For example, one association of the African American stereotype is aggression, and studies have shown that ambiguous behaviors performed by an African American person are more likely to be interpreted as aggressive than identical behaviors executed by a Caucasian person (Duncan 1976, Sagar & Schofield 1980). Similarly, in a study examining whether stereotypes affect the construal of individuating information about an unknown subject, the interpretation of ambiguous individuating information was found to be influenced by the unknown subject's occupational stereotype (Kunda & Sherman-Williams 1993). Using gender-based occupational stereotypes previously found to be strongly or weakly associated with aggressiveness – construction workers were significantly more aggressive than housewives (Krueger & Rothbart 1988) – an ambiguously-described aggressive act (i.e. hitting someone who annoyed him/her) was interpreted as more aggressive when the actor was a construction worker than when the actor was a housewife (Kunda & Sherman-Williams 1993). Likewise, given that people of low socioeconomic status are stereotyped as being low in intelligence, perception of a child's academic performance was shown to be affected by the child's socioeconomic status (Darley & Gross 1983). Stereotypes may also affect the perception of a non-stereotypical target

when the perceiver is primed with a stereotypic exemplar or a stereotype group. African Americans, for example, are often stereotyped as being hostile (Brigham 1971, Devine 1989). After priming with words related to African Americans, participants were asked to judge the ambiguous actions of a race-unspecified person on scales measuring hostility (Devine 1989). The study found that those primed with stereotypic words judged the ambiguous behaviors to be more hostile than those primed with neutral words (Devine 1989). In these studies, it has been consistently shown that the ways in which a perceiver interprets the actions and behaviors of others can be influenced by the stereotype instantiated by the actor and by the unrelated activation of stereotypes.

Effects of Stereotyping on Perceivers (Priming)

Stereotype activation can also affect the behavior, attitudes, and goals of the perceiver. For example, encountering social stereotypes in advertising can affect subsequent behavior and judgments. Studies examining the effects of anti-smoking advertisements and advertisements for cigarettes have demonstrated that anti-smoking advertisements prime negative smoker stereotypes, while cigarette advertisements prime positive smoker stereotypes, and both can affect intentions to smoke (Pechmann & Knight 2002). Similarly, research shows that men who viewed television advertisements that depicted the female sub-stereotype of women as sex objects (Deaux et al 1985) subsequently behaved in a more sexist manner while simulating a job interview with a female confederate – choosing to sit closer to the female interviewee, asking more sexist questions, and recalling more easily her physical attributes than her qualifications (Rudman & Borgida 1995). Compared to the men who viewed control advertisements, the men who viewed advertisements that depicted women as sex objects exhibited increased accessibility

of the associations with women as sex objects (as shown with a lexical decision task), which in turn led to more sexist behavior (Rudman & Borgida 1995).

Many of the studies involving priming of a stereotyped social group have supported the idea that priming a social group causes the subject to assimilate to the behaviors of the social group. Priming social categories can result in temporary behavioral changes, pursuit of goals associated with the primed social group, and shifts in attitudes to align with those associated with the prime. In a classic study on behavioral priming, participants primed with the stereotype of the elderly subsequently walked more slowly, thus assimilating behaviors (moving slowly) that are associated with the stereotype of the elderly (Bargh, Chen & Burrows 1996.) This also held true for priming of the African American male stereotype – participants primed with faces of African American men subsequently expressed more hostility (Bargh, et al 1996). These behavior changes even extend to behaviors that increase one's likelihood of becoming a member of a negatively-stereotyped group. In Campbell and Mohr (2011), priming an overweight stereotype increased the amount of indulgent foods that participants chose and consumed. Overeating indulgent foods is part of the overweight stereotype, but it is also a behavior that makes one more likely to become overweight. As well as behavioral changes, participants can also be primed to pursue goals associated with a stereotyped group (Aarts et al 2005, Campbell & Mohr 2011). Participants primed with nurses pursued helping goals, while participants primed with stockbrokers and other groups associated with the goal of making money pursued money-making goals (Aarts et al 2005). Stereotype priming can also lead participants to endorse and express attitudes associated with the primed group, for example, endorsing conservative attitudes after exposure to an elderly stereotype, and expressing more prejudiced attitudes after exposure to a skinhead stereotype (Kawakami, Dovidio & Dijksterhuis 2003). Priming social categories

generally results in assimilation of behavior, goals, and attitudes to those associated with the prime.

Under certain circumstances, however, perceivers will contrast away from the behavior, goals, and attitudes of a stereotyped group rather than assimilate. Specifically, ingroup identification, salience of the group's "outgroup" status, and priming of exemplars rather than categories, evoke social comparison processes and lead to contrasting behaviors (Dijksterhuis et al 1998, Schubert & Hafner 2003, Hall & Crisp 2008). For example, two studies show behavioral contrast after priming with the elderly stereotype (Schubert & Hafner 2003, Hall & Crisp 2008). Past research has shown that the elderly stereotype includes the concept that elderly people move more slowly and are more forgetful than younger people (Brewer, Dull & Lui 1981, Bargh, Chen & Burrows 1996). Schubert and Hafner (2003) found that, when an elderly group prime was made explicitly an outgroup (specifically, an outgroup unrelated to being elderly using a minimal group paradigm), it provoked behavioral contrast – those primed reacted more quickly on a lexical decision task, when assimilation to the elderly prime would have predicted slower responses because of the elderly stereotype of moving slowly. In similar research, Hall and Crisp (2008) demonstrated that a high level of identification with a relevant ingroup may cause contrast away from the associations with the primed outgroup. In a study that first measured ingroup identification (youth), then primed participants with the elderly stereotype, those participants who more highly identified with youth showed increased recall on a memory task rather than decreased recall, as one would expect of assimilation to an elderly prime and the stereotype association that elderly people are forgetful (Hall & Crisp 2008). In addition, Dijksterhuis and colleagues (1998) compared priming effects from priming the categories of professor (high intelligence), supermodel (low intelligence), and elderly (slow) to the priming

effects from priming the exemplars of Albert Einstein, Claudia Schiffer, and the 89-year old Dutch Queen Mother. Priming professors and Claudia Schiffer resulted in greater scores on a general knowledge task, while priming Einstein and supermodels resulted in lower scores; and priming the Dutch Queen Mother resulted in faster walking speeds than priming the elderly (Dijksterhuis et al 1998). These results hold even for behavior measured over time; when participants were primed with Superman they were less likely to help in future situations than when people were primed with the superhero category, and this extended to both commitment to future volunteerism and actual volunteering behavior up to three months later (Nelson & Norton 2005). Research suggests that contrast effects may occur when priming with an exemplar, when that exemplar provokes comparison with the self – contrast then occurs because the perceiver views him/herself as very different from the exemplar (Dijksterhuis et al 1998, Wheeler & Petty 2001). Ingroup identification and salience of the group's "outgroup" status are also thought to drive contrast rather than assimilation because they invoke a social comparison process in the perceiver (Schubert & Hafner 2003, Hall & Crisp 2008).

<center>OBJECTIVE OF DISSERTATION</center>

The objective of this dissertation is to examine a further avenue of stereotype effects. The research contributes to the stereotyping literature, showing that stereotype associations can transfer to associated objects. It also contributes to the literature examining advertising's effects on product perceptions and brand personality. In this dissertation, I examine the effects of stereotypic advertising models on brand and product perceptions. I propose that the stereotype associations attached to an advertising model who is a member of a stereotyped group can transfer for the brand personality associations and perceived attributes of the advertised product.

This dissertation is organized as follows: Chapter 2 reviews previous work upon which the research draws, Chapter 3 describes the experiments conducted to test the stereotype transfer effect, and Chapter 4 discusses conclusions drawn from the experiments.

CHAPTER 2

CONCEPTUAL DEVELOPMENT

This dissertation proposes that advertising models who are members of a stereotyped group transfer stereotype associations to the brand personality and perceived product attributes of products in an advertisement. There are many examples of advertisements that use an unknown advertising model who is a member of a stereotyped group. For example, one of the most-discussed ad campaigns of the past decade, the Dove "real beauty" ads, frequently features ad models who are overweight or older to sell Dove brand beauty products. Dove claims their ad campaign is designed to provoke discussion and make standards of beauty more accessible to women (Dove n.d.), but does it also associate the Dove brand and Dove-branded beauty products with the negative and positive traits associated with the stereotypes of overweight and elderly women? This proposed stereotype transfer may be unintentional and unplanned, yet have significant effects on perceptions of brand personality and product attributes.

Celebrity Meaning Transfer

Research on stereotype effects have shown that stereotype perception affects the perceiver's behavior, attitudes, and goal pursuit, but have not examined whether there is transfer between stereotypic associations and associated objects. Evidence of meaning transfer from celebrity endorsers informs our hypothesis that stereotypic associations activated from the use of a stereotypic ad model will transfer to the brand advertised. The meaning transfer model of celebrity endorsements suggests that the associations or meanings that are attached to a celebrity through the roles that they play and the way they are portrayed in the media can transfer to the product and brand that the celebrity endorses (McCracken 1989). Research has shown that brands can be affected by having an association with a celebrity endorser; that this association

allows for a transfer of traits from the celebrity to the brand (Batra & Homer 2004, Campbell & Warren 2012, Miller & Allen 2012.) For example, a celebrity endorser associated with "sophistication" (Barbara Walters) increased the image of sophistication of an expensive product (Batra & Homer 2004.) Research has also examined the transfer of negative associations from celebrity endorsers, and found that negative associations with an endorser (such as arrogance) are more likely to transfer to the endorsed brand than are positive associations (such as intelligence; Campbell & Warren 2012). Further, Miller and Allen (2012) demonstrate that these celebrity endorser associations alter beliefs about the brand – for example, pairing Paris Hilton, Britney Spears, and Jessica Simpson with the Gap resulted in increased beliefs that the Gap is trashy, cheap, and controversial.

The traits examined in the literature on celebrity meaning transfer are those traits and meanings that are specific to the celebrity – for example, Barbara Walters is sophisticated and Roseanne Barr is fun (Batra & Homer 2004). Celebrities gain meaning through the roles that they play and how they are portrayed in the media (McCracken 1989). Through celebrity endorsement, the meaning attached to the celebrity are transferred to the endorsed product, which adds value to the product that the consumers desire (McCracken 1989). This dissertation expands the research on meaning transfer in advertisements to explore the transfer of stereotype associations from unknown (non-celebrity) advertising models to the brand personality and perceived product attributes of the advertised product. Transfer in advertising does not need to be limited only to celebrity meanings. I propose that advertising models who are members of stereotyped groups may be similar to celebrities in that consumers have a set of associations that come to mind when they think of the stereotype. A stereotype can be defined as a knowledge structure or a set of associations that encompass the traits that are viewed as representative of a

social category, including characteristics such as personality traits, attitudes, behavioral tendencies, and expectations of the social group, as well as the set of traits that differentiate the group from other groups (Kawakami, Young & Dovidio 2002, Stangor 2009). Stereotypes and celebrity meanings are related but different: both consist of a variety of associations that are linked in memory to the target, but they are created differently and serve different purposes. Stereotypes are associations attached to a social group, not specific to any one group member, and serve to preserve cognitive resources (Macrae et al 1994). Celebrity meaning, on the other hand, are associations attached to a specific person, are not linked to celebrities as a group, and represent individuating information about the celebrity. Even though stereotype associations are not linked specifically to one person but are representative of the group as a whole, stereotype associations are activated by the perception that a target person is a member of the stereotyped group, so can be activated in the same manner as celebrity meaning associations. When a perceiver sees an advertisement, their associations with the advertising model should be activated. When the advertising model is a celebrity, the celebrity's specific associations should be activated, and when the advertising model is an unknown actor who is a member of a stereotyped group, their stereotype associations should be activated. These activated associations should then transfer to the advertised product or brand.

While the celebrity meaning transfer literature has not examined stereotypes, one related study showed that the gender of an advertising model affects the perceived masculinity and femininity of the brand personality of the advertised product (Grohmann 2009). Grohmann operationalized masculinity and femininity as personality traits, but it is equally true that male and female are stereotypes that evoke stereotypical associations. The meaning transfer literature

has focused on celebrity meaning transferring to brand meaning or brand personality. I expect that, similarly, stereotype associations will also transfer to brand personality.

> H1A: A product advertised by a model who is a member of a stereotyped group will be
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> perceived as having brand personality traits that are more associated with the stereotype
>
> than if the same product is advertised by a model who is not a member of a stereotyped
>
> group.

Product Attributes

Beyond brand personality, perception of product attributes may also be affected by stereotype transfer. Consumers tend to make inferences about levels of product attributes for which they have no direct information. Inferences can be influenced by a variety of heuristics and cues, including knowledge about the product category, country of origin, and comparison to similar products (Kardes, Posavac & Cronley 2004.) Inferences about product attributes are commonly made based on knowledge about other product attributes; for example, a consumer may infer that a higher priced option is also a higher quality option (Huber & McCann 1982). Inferences about product attributes can also be impacted by more subtle cues, such as graphics and colors on product packaging (Bone & France 2001.) For example, research has shown that a cola with a red label containing images of a lightning bolt and a football player led to beliefs that the drink was highly caffeinated and would provide energy, whereas a cola with a blue label containing images of a man lounging beneath a palm tree led to beliefs that the cola was very lightly caffeinated and would be a relaxing beverage (Bone & France 2001.) The traits associated with a stereotypical advertising model should also act as a cue to affect consumer inferences of product attributes.

H1B: A product advertised by a model who is a member of a stereotyped group will be

perceived as having product attributes that are more associated with the stereotype than if

the same product is advertised by a model who is not a member of a stereotyped group.

Stereotype-Product Relevance

In the literature on celebrity meaning transfer, much work has been done on the match-up

hypothesis (Kahle & Homer 1985). The match-up hypothesis suggests that in order for the

celebrity endorser to enhance the image of the endorsed product, there must be congruence

between the celebrity's image and the product's image (Kamins 1990). In order for meaning to

transfer, the product image must match the meaning associations in some way. For example,

physically attractive endorsers enhance the image of attractiveness-related products (such as a

luxury car), but not attractiveness-unrelated products (such as a personal computer; Kamins

1990). Even in domains unrelated to attractiveness, match between the endorser and the product

increased ad believability and spokesperson attractiveness (Kamins & Gupta 1994). In a study

testing the match-up hypothesis, using the actor Leonard Nimoy as spokesperson increased ad

believability and increased spokesperson attractiveness when he endorsed a personal computer (a

match) but not when he endorsed running shoes (not a match; Kamins & Gupta 1994). A further

study showed that the match must occur between the consumer's schema for the product

category and the image or personality of the spokesperson. A celebrity endorser with a

sophisticated image (Barbara Walters) increased the belief that a cookie brand was sophisticated

but not a chip brand because the cookie brand had an association with sophistication but the chip

brand did not (Batra & Homer 2003). Finally, Campbell and Warren (2012) show that match

between endorser image and product schema matters more for positive endorser traits than for

negative endorser traits; the endorser's negative traits influenced brand image beliefs of an

incongruent product as well as of a congruent product. When a product is a match to the endorser's image, both the endorser's positive and negative traits transfer to the product, but when the product is not a match, only the endorser's negative traits transfer (Campbell & Warren 2012).

Although the match-up literature has focused solely on celebrity endorsers, it is expected that it will also apply to the transfer of stereotype associations from unknown ad models to products in advertisements. For example, in the recent H&R Block advertisements featuring a female tax advisor, both the gender stereotype (woman) and product (tax preparation services) are associated with math skills – women negatively, and tax preparation positively. Thus "math skills" is an area of overlap where we might expect to see inferences about the product's math-related attributes. Research has shown that activating a concept activates the dimension upon which that concept lies – so the concept itself, as well as its polar opposite on the same dimension is activated (Colombo & Williams 1990, Park et al 2001). For example, Park and colleagues (2001) primed participants with the concepts "dishonest," "honest," "kind," or "unkind" and then asked them to evaluate a target person based on a description is his actions. The actions – such as telling a girlfriend that her new hairstyle looks terrible – could be interpreted as being either honest or unkind. They found that participants primed with either dishonest or honest were more likely to describe the person as honest than unkind, and participants who were primed with either kind or unkind were more likely to interpret the person's behavior as unkind than honest (Park et al 2001). Because honest and dishonest, and kind and unkind are two poles of the same dimension, priming with one automatically activates the other as well (Park et al 2001). Similarly, I propose that when the stereotype associations

activated by a stereotypical model are the on the same dimension as a product association, the dimension will be activated and more likely to affect inferences about the product's attributes.

> H2: An advertising model who is a member of a stereotyped group will lead to the advertised product having perceptions of brand personality traits that are more associated with the stereotype when the stereotype-related traits are relevant to the consumer's schema for the product than when they are irrelevant.

Automaticity of Stereotype Transfer

Although stereotype activation is thought to be a fairly automatic process designed to reduce the need for expending cognitive resources (Macrae, Stangor & Milne 1994), stereotype transfer is not necessarily an automatic process. The literature on celebrity meaning transfer in advertisements suggests that meaning transfer is likely an effortful process, since the perceiver must form new links between the traits of the model and the characteristics of the product (Miller & Allen 2012). Miller and Allen (2012) used an evaluative conditioning procedure to show that celebrity meaning transfer occurs because of changes in inferential beliefs about the product to align with perceptions of the celebrity. If changing inferential beliefs is effortful, then cognitive load should moderate stereotype transfer.

Previous research in stereotyping has shown that stereotypes are automatically applied under conditions of cognitive load (Gilbert & Hixon 1991, Sherman, Macrae & Bodenhausen 2000). Participants were exposed to an Asian woman during a word-completion task, then listened to a woman who was ostensibly the Asian woman seen earlier describe daily activities, and then given 90 seconds to rate the woman on traits that were either stereotypic or counter-stereotypic of Asian-Americans (Gilbert & Hixon 1991). The participants who completed a second task designed to reduce cognitive availability while listening to the recording of the

woman describing daily events subsequently rated her more highly on stereotypical traits than those who were not cognitively busy (Gilbert & Hixon 1991). This study indicates that both activation and application of stereotypes can occur even when cognitive resources are low.

There is also evidence that an increase in attentional resources can reduce stereotype application by allowing the perceiver to correct for the perceived influence of the stereotypes (Sherman, Macrae & Bodenhausen 2000). In other words, when a perceiver recognizes that a stereotype may be affecting his evaluations, he is able to inhibit the application of the stereotype. For example, study participants asked to judge the guilt of a person accused of committing a crime relied more on the person's stereotype when under high cognitive load than when under low cognitive load (Van Knippenberg, Dijksterhuis & Vermeulen 1999). This correction process, however, depends on the perceiver recognizing that the stereotype may unfairly affect his or her judgment, and then having the cognitive resources required to correct for the bias (Sherman et al 2000).

While it is possible that the presence of a stereotyped model in an advertisement may result in perceivers recognizing the biasing influence of the stereotype and correcting for it, it seems more likely that, if changing inferential beliefs is required for stereotype transfer, reduced cognitive resources will reduce the likelihood of stereotype transfer effects. Since evidence indicates that celebrity meaning transfer is caused by changing inferences, it is expected that a lack of cognitive resources will moderate stereotype transfer.

H3: Products advertised by a model who is a member of a stereotyped group will be

perceived as having product attributes and brand personality traits that are more

associated with the stereotype when the participant is not cognitively busy than when the

participant is cognitively busy.

Role of Familiarity

Much of the past research on stereotype priming has activated stereotypes with related concepts, and some with stereotypical names and photographs of unfamiliar people. However, in the real world, we also see people we know who fit into stereotyped groups. Familiar people differ from people we do not know because when someone is familiar, we have many more associations with them (person-specific associations) that can become activated on exposure to the stereotyped person. Unlike stereotype associations, which are group-level associations based on categorization, and formed in part through a combination of socialization and exposure to various group members, person-specific associations are based on individualization, formed through direct and indirect exposure to one specific person, and are not generalized to the social group. Familiarity can be defined as "knowledge of a source through exposure" (McCracken 1989, p. 311, Erdogan 1999, p. 3). This can include the ability to recognize a person combined with feelings of familiarity and knowledge of person-specific information. Familiarity can occur through either social relationships (e.g.: familiarity gained through friendship) or parasocial relationships (e.g.: familiarity gained through one-sided, media-based relationships with celebrities.)

Memory can be modeled as an associative network that is responsible for the activation of trait concepts and stereotype associations that are, in turn, responsible for stereotype priming effects (Bargh, Chen & Burrows 1996, Dijksterhuis & Van Knippenberg 1998.) The associative network model of memory implies that knowledge is stored as a series of nodes that are linked together (Wickelgren 1981.) The associative network for a familiar person is not comprised solely of stereotype-related associations. The associative network of memory implies that category-specific links are attached to a target person through association with the category, and

person-specific links are attached to a person through experience. The associative network of an unfamiliar person should be comprised solely of category-specific links, but increasing familiarity with a target person should increase the complexity of the associative network through the addition of person-specific links.

Drawing on associative network theory, I propose that the stereotype associations are less likely to transfer when the advertising model is familiar to the perceiver than when the advertising model is unfamiliar. The links in an associative network vary in terms of strength and uniqueness, and the set of associations linked to a node vary in terms of size and complexity (Meyers-Levy 1989, Bettman 1979.) The larger and more complex the set of associations, the weaker the links between the associations (Meyers-Levy 1989), and the stronger and more unique that a given association is, the more likely it is to be activated (Krishnan 1996.) In the associative network of an unfamiliar target person, there should be many category-specific associations, which are not unique to the target, and no person-specific associations. In the associative network of a familiar target person, on the other hand, there should be non-unique category-specific associations as well as unique person-specific associations. Compared to the unfamiliar target person, the associative network of the familiar target person should be larger, and the category-specific associations should be weaker than the person-specific associations and make up a smaller proportion of the total associations. Given the differences in the associative network, when an advertising model is familiar, person-specific meaning should transfer, but stereotype associations should be less likely to transfer than if the model is unfamiliar.

H4A: Products advertised by a familiar person who is a member of a stereotyped group are less likely to gain stereotype associations than when they are advertised by an unknown ad model who is a member of a stereotyped group.

H4B: Associations with a familiar advertising model will transfer to the advertised product.

Possible Alternative Explanations

There are two possible alternative explanations that would explain the pattern of results indicating stereotype transfer. The first alternative explanation is that stereotype transfer is merely an artifact of priming. It has been shown repeatedly that stereotype activation primes responses that are aligned with the activated stereotype. Previously encountered and activated information affects the way people interpret new information, even if the new information is unrelated (Hilton & Von Hippel 1996). In terms of the stereotype transfer effect, this would mean that seeing the advertising model who is a member of a stereotyped group activates the stereotype and those activated associations are then applied to the next task of evaluating the product. This is a plausible alternative explanation that would explain an apparent stereotype transfer effect in the case that evaluation occurs immediately after viewing the advertisement, without any delay. However, because semantic priming effects decay quickly (Higgins, Bargh & Lombardi 1985), the priming explanation would predict that imposing a delay of 5 to 10 minutes between viewing the advertisement and evaluating the product would remove the effects of the stereotype activation. On the other hand, a transfer of associations from the advertising model to the advertised product should not decay quickly. To rule out this potential alternative explanation, a delay can be introduced between viewing the advertisement and evaluating the product. If the effect persists across the delay, this should provide evidence that transfer is not a result of semantic priming.

H5A: The stereotype transfer effect will persist over a delay.

The second possible alternative explanation is that the stereotype transfer effect is an artifact of perceiver expectations of who is the target market for the advertised product. Research on target market effects in advertising has shown that for members of a stereotyped group, similarity between the ad model and the group increases the persuasiveness of the ad, and increases positive affect toward the ad and toward the product, while for members of the majority (non-stereotyped) group, the feeling that they are not the target of the advertisement reduces that persuasiveness of the ad and increases negative affect toward the ad and product (Aaker, Brumbaugh, & Grier 2000). I have been unable to find literature that examines how perceptions of the target market for an advertisement affect viewer perception of the product's attributes, but it follows that an advertising model who is similar to the target market may indicate that the product aligns with the needs and wants of the group represented by the advertising model. If perceivers believe that the advertising model is representative of the market segment for which the product is designed, then increased ratings on product attributes that align with the needs and wants of the market segment in question may be expected. To explore this alternative explanation, perceived target market will be measured and tested to see if it mediates the effect.

> H5B: Stereotype transfer will have an effect separate from the effect of inferences about
> the product's perceived target market.

Overview of Studies

A series of five studies test these hypotheses. Studies 1A and 1B examine stereotype transfer to brand personality, testing Hypothesis 1a with occupational stereotypes. Study 2 examines stereotype transfer to perceived product attributes and attempts to examine target market as an alternative explanation, testing Hypothesis 1b and Hypothesis 5b with gender

stereotypes. Study 3 examines the role of stereotype-product match, testing Hypothesis 2 with

racial stereotypes. Studies 4A and 4B examine the role of attentional resources and examines

semantic priming as an alternative explanation, testing Hypothesis 3 and Hypothesis 5a with

weight-based stereotypes (Study 4A) and race and gender stereotypes related to math ability

(Study 4B). And Studies 5B and 5B examine the role of familiarity, testing Hypotheses 4a and

4b with gender stereotypes (Study 5A) and body weight stereotypes (Study 5B). Conceptual

models of the proposed hypotheses and of the alternative hypotheses are depicted in Figures 1A

and 1B.

Figure 1 A

Conceptual Model
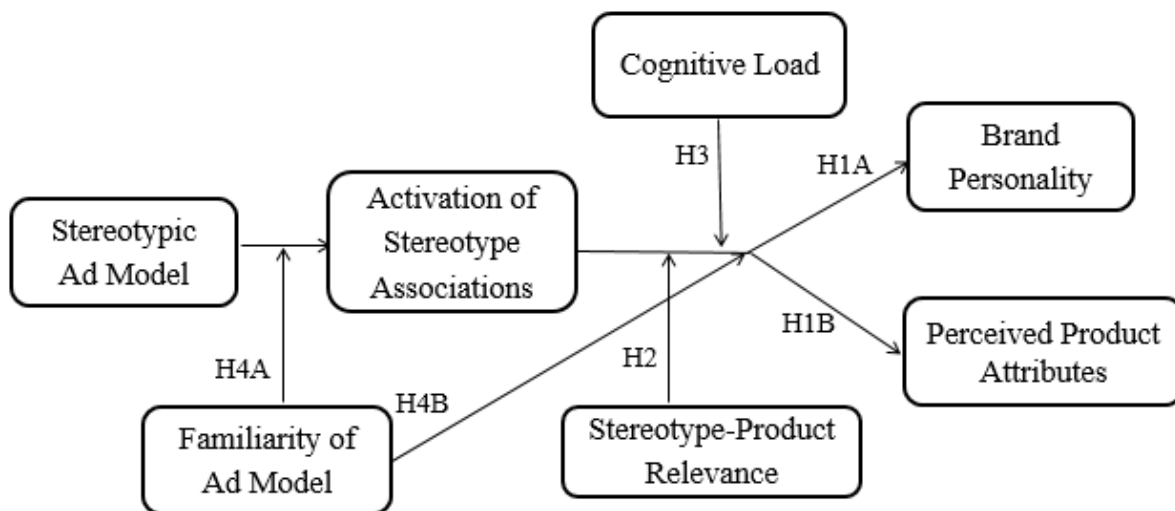
Figure 1 B

Model of Alternative Hypotheses
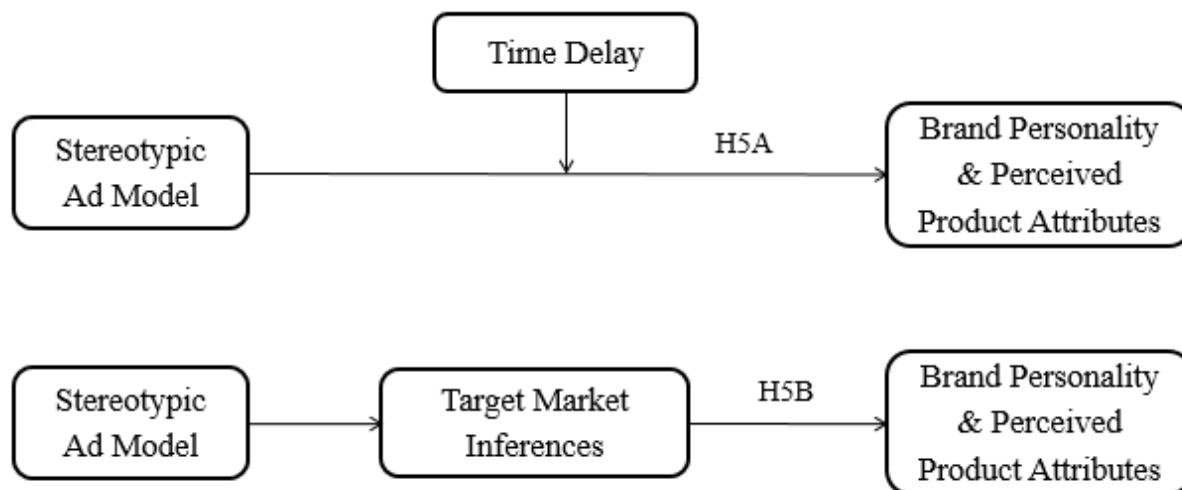
CHAPTER 3

STUDIES 1A AND B: TRANSFERRING STEREOTYPE ASSOCIATIONS FROM AD

MODEL TO BRAND

Study 1 examines whether the associations with occupational stereotypes in an

advertisement transfer to brand personality. The goal of this study is to test the basic proposition

that the stereotypic traits associated with an advertising model transfer to the brand personality of

the advertised product. Research into stereotypes suggests that stereotypes tend to cluster around

warmth/competence dimensions (Fiske et al 1999). For example, stay at home moms tend to be

viewed as warm but not competent, but businesswomen are stereotyped as competent and cold

(Fiske et al 2002). These stereotypes can be very specific. For example, gender stereotypes, such

as "male" and "female" are broad stereotypical categories that are commonly categorized into

distinct sub-stereotypes that can be distinguished by their differing associations (Edwards 1992,

Noseworthy & Lott 1984). In terms of the warmth and competence dimensions, traditional men

are typically associated more strongly with competence than warmth while traditional women are

typically associated more strongly with warmth than competence (Eckes 2002). This is also true

of elderly stereotypes, which can be separated into stereotypes such as grandmother, senior

citizen, or elder statesmen (Brewer et al 1981). Occupations can also carry distinct stereotypes,

such as the stereotypes that construction workers are aggressive and housewives are not

aggressive (Krueger & Rothbart 1988).

Study 1 tests Hypothesis 1A, that a product advertised by a stereotyped model will be

perceived as having brand personality traits that are more associated with the stereotype than if

the same product is advertised by a model who is not a member of a stereotyped group.

Pretests

Two pretests were completed to (1) find a product category that is neutral with regards to gender associations; and (2) identify occupational stereotypes of men and women that are associated with either high warmth/low competence or low warmth/high competence. The first pretest was completed in two parts. Part 1, with 19 participants (68% male, average age 31, recruited from Amazon's Mechanical Turk (MTurk)), examined whether various product categories are associated with both women and men, neither women nor men, only women, or only men. Part 2, with 41 participants (63% male, average age 33, recruited from MTurk) examined the level of involvement for men and women with a variety of product categories. The pretest found that toothpaste is a product category that is equally involving for both men and women (Toothpaste: $M_{\text{men}} = 4.65$, $M_{\text{women}} = 5.05$, $F = 2.41$, $p = 0.13$) and is equally associated with both men and women (95% of participants indicated that they associated toothpaste with "both men and women" or "neither men nor women.") The second pretest, completed with 57 adults recruited from MTurk (61% male, average age 33) identified, within each gender, occupational stereotypes that are associated with either high warmth/low competence or low warmth/high competence. The warmth and competence associations were measured using the five-item competence and warmth scales developed by Fiske et al (1999). Items on the competence scale are competent, confident, competitive, independent, and intelligent; and items on the warmth scale are likable, sincere, warm, good-natured, and tolerant. The pretest confirmed that "Businesswoman" is significantly higher on competence and lower on warmth than "Stay-at-Home Mom" (Competence: $M_{\text{businesswoman}} = 4.3$, $M_{\text{mom}} = 2.91$, $F = 64.4$, $p = 0.000$; Warmth: $M_{\text{businesswoman}} = 2.75$, $M_{\text{mom}} = 3.96$, $F = 30.7$, $p = 0.000$); and "Businessman" is significantly

higher on competence and lower on warmth than "Stay-at-home Dad" ($M_{businessman} = 4.30$, $M_{dad} = 2.67$, $F = 41.1$, $p = 0.000$; $M_{businessman} = 2.67$, $M_{dad} = 3.95$, $F = 31.2$, $p = 0.000$).

Participants and Design

Study 1 is comprised of two replicates: Study 1A examines female occupational stereotypes, and Study 1B examines male occupational stereotypes. Participants were 151 adults recruited from MTurk and paid $0.20 for their participation ($N_{1A} = 71$, $N_{1B} = 80$). Participants ranged in age from 18 to 77 ($M = 35.62$), and were 50% male. The study was a 2 (Warmth/Competence: high/low, low/high) between subjects design with 2 (Gender of Ad Model: male, female) as a replicate. It is expected, for each replicate, that the toothpaste advertised by the model with the high warmth/low competence occupational stereotype will be perceived as higher on the brand personality dimensions of femininity and warmth, and lower on the brand personality dimensions of masculinity and competence compared to the toothpaste advertised by the model with the low warmth/high competence occupational stereotype.

Study 1A Procedure

On the first screen of the online survey, participants read that the study was looking at how consumers react to advertisements about a brand. Participants then clicked on the "next" arrow, and viewed one of the two advertisements (see Appendix 1A for images of the advertisements and screenshots of the questionnaire). The ad copy stated, "In the hectic life of a businesswoman [stay-at-home mom], good hygiene is important. I rely on Frescodent's advanced whitening formula for a bright smile and fresh breath that lasts all day long." After viewing the ad, participants rated their attitudes toward the toothpaste brand on three 7-point scales from bad to good, negative to positive, and unfavorable to favorable, and the likelihood that they would purchase the toothpaste. Next, participants were told, "Brands are often seen as

having personalities. Try to think of Frescodent as if it were a person. To what extent do you think the following personality traits describe Frescodent?" The personality traits listed were Grohmann's (2009) masculine brand personality scale (adventurous, aggressive, brave, daring, dominant, and sturdy), and feminine brand personality scale (expresses tender feelings, fragile, graceful, sensitive, sweet, and tender), and Fiske and colleagues' (1999) competence scale (competent, confident, competitive, independent, and intelligent) and warmth scale (likable, sincere, warm, good-natured, and tolerant).

Covariates

In this study, four potential covariates were collected. Participant gender and age were collected at the end of the study primarily for demographic purposes. Brand attitude and ad believability were also collected to control for any potential differences in how realistic the advertisement was and in liking of the brand due to the different advertising models.

Study 1A Results

First, the dependent variables were examined for reliability. The four brand personality scales, Masculine Brand Personality (adventurous, aggressive, brave, daring, dominant, sturdy), Feminine Brand Personality (expresses tender feelings, fragile, graceful, sensitive, sweet, tender), Competence (competent, confident, competitive, independent, and intelligent), and Warmth (likable, sincere, warm, good-natured, and tolerant) were found to be reliable (αs > 0.81; see Appendix 5B for scale reliabilities).

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender or participant age (ps > 0.5). Thus these variables were excluded from subsequent analyses. Brand attitude and ad believability both had

significant main effects on ratings of brand personality (Brand Attitude: $F(1,67) = 5.01$, $p = 0.03$; Ad Believability: $F(1,67) = 4.94$, $p = 0.03$). Thus these two variables were included in the subsequent analysis.

Stereotype transfer was assessed by comparing the perceived feminine and masculine brand personality ratings, and ratings of the brand personality on competence and warmth, when advertised by a model with an occupational stereotype indicating high warmth/low competence to the ratings when advertised by a model with an occupational stereotype indicating low warmth/high competence. A one-way ANCOVA with brand personality dimension as a repeated measure was run controlling for brand attitude and ad believability. The results were not materially different when the model was run without the two covariates[1]. A significant within-subjects interaction of brand personality dimension and model stereotype provides evidence of stereotype transfer ($F(3,201) = 17.93$, $p < 0.0001$). The significant interaction of brand personality dimension and model stereotype supports Hypothesis 1A. Participants rated the toothpaste advertised by a model with a stereotype of high competence and low warmth (businesswoman) to have a more masculine (MBP) and less feminine (FBP) brand personality than when advertised by a model with a stereotype of low competence and high warmth (FBP $M_{businesswoman} = 3.14$, $M_{stay-at-home\ mom} = 4.18$, $F(1,67) = 16.05$, $p = 0.0002$; MBP $M_{businesswoman} = 3.88$, $M_{stay-at-home\ mom} = 3.06$, $F(1,67) = 10.25$, $p = 0.002$.) Additionally, participants rated the toothpaste advertised by the businesswoman (high competence/low warmth stereotype) as

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[1] Results from model without covariates reported here. There was a significant within-subjects interaction of brand personality dimension and model stereotype ($F(3,207) = 17.57$, $p < 0.0001$). Participants rated the toothpaste advertised by a model with a stereotype of high competence and low warmth (businesswoman) to have a more masculine (MBP) and less feminine (FBP) brand personality than when advertised by a model with a stereotype of low competence and high warmth (FBP: $F(1,69) = 15.26$, $p = 0.0002$; MBP: $F(1,69) = 8.46$, $p = 0.005$.) Additionally, participants rated the toothpaste advertised by the businesswoman (high competence/low warmth stereotype) as significantly less warm and marginally more competent than the toothpaste advertised by the stay at home mom (low competence/high warmth stereotype; Warmth: $F(1,69) = 6.88$, $p = 0.01$; Competence: $F(1,69) = 3.24$, $p = 0.076$.

significantly less warm and more competent than the toothpaste advertised by the stay at home mom (low competence/high warmth stereotype; Warmth $M_{\text{businesswoman}} = 4.27$, $M_{\text{stay-at-home mom}} = 5.00$, $F(1,67) = 7.58$, $p = 0.008$; Competence $M_{\text{businesswoman}} = 4.76$, $M_{\text{stay-at-home mom}} = 4.27$, $F(1,67) = 4.07$, $p = 0.048$.) Figures 2A and 2B show the effects of the model stereotype on the four dimensions of brand personality. See Appendix 1A for means, standard deviations, and scale reliability.
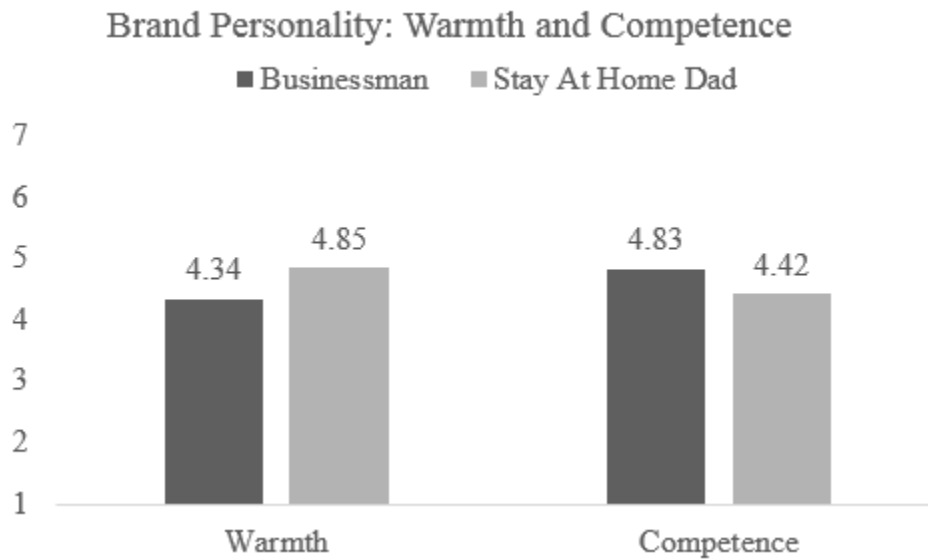

Figure 2 A

Bar chart titled "Brand Personality: Masculine and Feminine" with legend: Businesswoman, Stay-at-home Mom. Y-axis ranges 1 to 7. Feminine Brand Personality: Businesswoman 3.14, Stay-at-home Mom 4.18. Masculine Brand Personality: Businesswoman 3.88, Stay-at-home Mom 3.06.
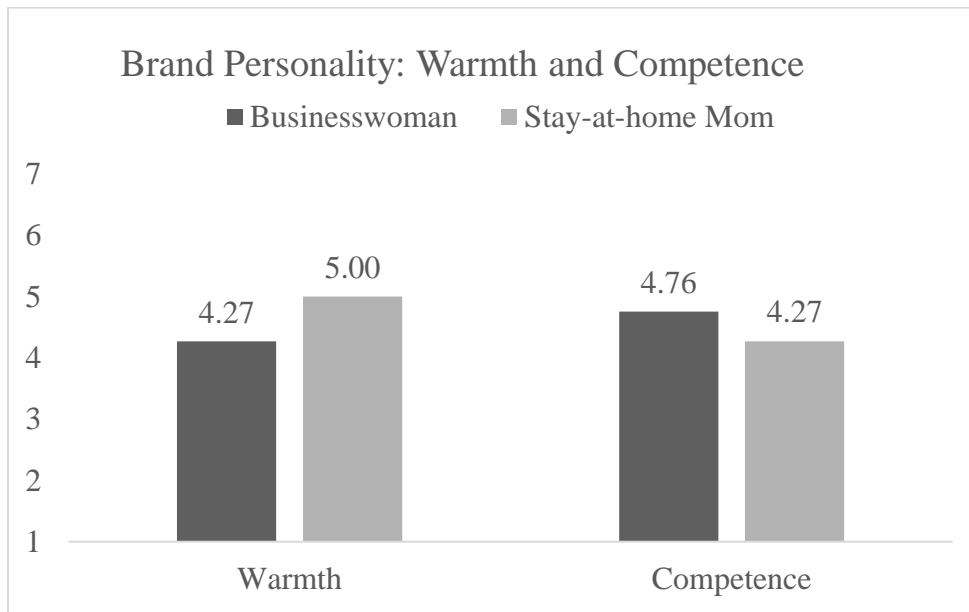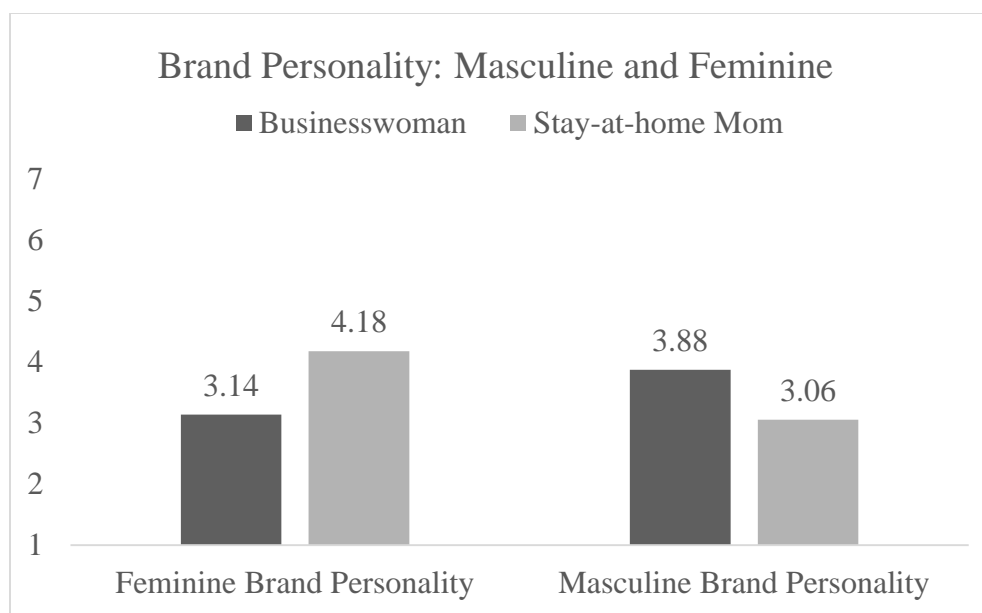
Figure 2 B

Study 1B Procedure

The procedure for Study 1B was identical to Study 1A, except the businesswoman was replaced with a businessman, and the stay-at-home mom was replaced with a stay-at-home dad (see Appendix 1B for advertisements).

Study 1B Results

First, the dependent variables were examined for reliability. The four brand personality scales, Masculine Brand Personality (adventurous, aggressive, brave, daring, dominant, sturdy), Feminine Brand Personality (expresses tender feelings, fragile, graceful, sensitive, sweet, tender), Competence (competent, confident, competitive, independent, and intelligent), and Warmth (likable, sincere, warm, good-natured, and tolerant) were found to be reliable (αs > 0.87; see Appendix 5B for scale reliabilities).

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations.

There was no significant effect of participant gender ($p = 0.99$). Thus participant gender was excluded from subsequent analysis. Brand attitude, ad believability and participant age had significant main effects on ratings of brand personality (Brand Attitude: $F(1,75) = 35.6$, $p < 0.0001$; Ad Believability: $F(1,75) = 10.22$, $p = 0.002$; Participant Age: $F(1,75) = 5.22$, $p = 0.02$). Thus these variables were included in the subsequent analysis.

Stereotype transfer was assessed by comparing the perceived feminine and masculine brand personality ratings, and ratings of the brand personality on competence and warmth, when advertised by a model with a sub-stereotype of high warmth/low competence to the ratings when advertised by a model with a sub-stereotype of low warmth/high competence. A one-way ANCOVA with brand personality dimension as a repeated measure was run controlling for participant age, brand attitude, and ad believability. The results were slightly different when the model was run without the three covariates[2]. A significant within-subjects interaction of brand personality dimension and model stereotype provides evidence of stereotype transfer ($F(3,225) = 18.76$, $p < 0.0001$). The significant interaction of brand personality dimension and model stereotype supports Hypothesis 1A. Participants considered the toothpaste advertised by a model with a stereotype of high competence and low warmth (businessman) to have a more masculine (MBP) and less feminine (FBP) brand personality than when advertised by a model with a stereotype of low competence and high warmth (stay-at-home dad; FBP $M_{\text{businessman}} = 3.46$, $M_{\text{stay-at-home dad}} = 4.45$, $F(1,75) = 25.38$, $p < 0.0001$; MBP $M_{\text{businessman}} = 4.30$, $M_{\text{stay-at-home dad}} = 3.66$,

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[2] Results from model without covariates reported here. There was a significant within-subjects interaction of brand personality and model stereotype ($F(3,234) = 16.95$, $p < 0.0001$). Participants considered the toothpaste advertised by a model with a stereotype of high competence and low warmth (businessman) to have a more masculine (MBP) and less feminine (FBP) brand personality than when advertised by a model with a stereotype of low competence and high warmth (FBP: $F(1,78) = 10.35$, $p = 0.0019$; MBP: $F(1,78) = 4.42$, $p = 0.037$.) However, participants did not rate the toothpaste advertised by the businessman (high competence/low warmth stereotype) as significantly less warm or more competent, than the toothpaste advertised by the stay-at-home dad (Warmth: $F(1,78) = 2.38$, $p = 0.13$; Competence: $F(1,78) = 1.89$, $p = 0.17$.)

$F(1,75) = 4.18, p = 0.044.$). Additionally, participants rated the toothpaste advertised by the businessman (high competence/low warmth stereotype) as significantly less warm, but not more competent, than the toothpaste advertised by the stay-at-home dad (low competence/high warmth stereotype; Warmth $M_{businessman} = 4.34$, $M_{stay-at-home dad} = 4.85$, $F(1,75) = 11.75$, $p = 0.001$; Competence $M_{businessman} = 4.83$, $M_{stay-at-home dad} = 4.42$, $F(1,75) = 1.32$, $p = 0.25$.) Figures 3A and 3B show the effects of the model stereotype on the four dimensions of brand personality. See Appendix 1B for means, standard deviations, and scale reliability.

Figure 3 A

Brand Personality: Masculine and Feminine
■ Businessman   ■ Stay At Home Dad
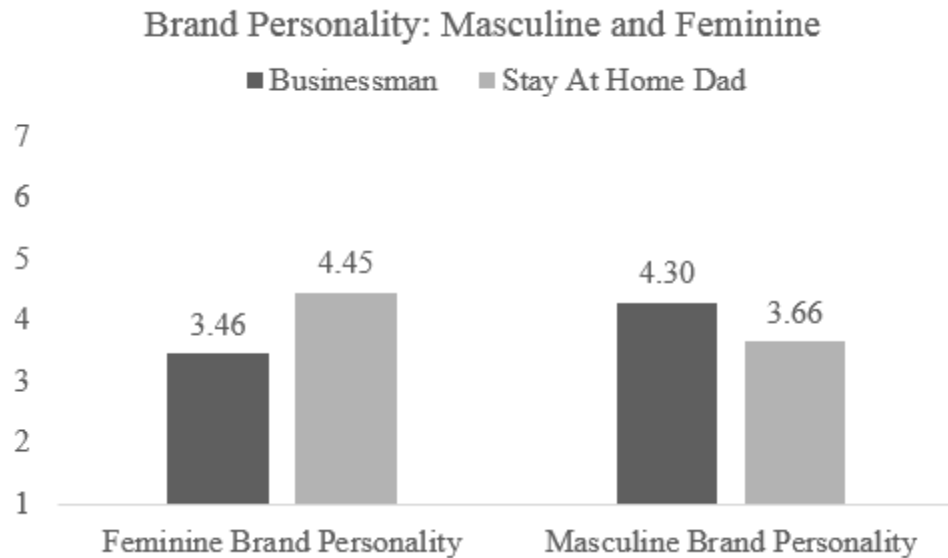
Figure 3 B

Discussion

The goal of this study was to test the basic hypothesis that the stereotype associated with an advertising model can affect consumers' perceptions of the brand personality of the advertised product. The data from this study suggest that the traits associated with the specific stereotype of an advertising model transfer to the perceived brand personality of the advertised product. Consistent with hypothesis 1A, the warmth/competence dimensions associated with the occupational stereotype of the advertising model transferred to the perceived brand personality of a product that is not typically associated with either warmth or competence. The next study will examine whether the stereotype of the advertising model can also influence perceptions of the product attributes.

STUDY 2: TRANSFERRING STEREOTYPE ASSOCIATIONS TO PERCEPTION OF

PRODUCT ATTRIBUTES

Study 2 examines the impact of stereotypical advertising models on the perception of specific product attributes as well as general brand personality, and examines the role of target market inferences in stereotype transfer. The goal of this study is to test (1) whether the presence of a stereotyped advertising model affects consumers' expectations of the product's attributes and (2) whether the transfer of associations from model to advertised product requires the inference that the model represents the target market. It is expected that there will be an effect of the advertising model's stereotype separate from the effect of target market inferences.

Product-related inferences can be influenced by a variety of heuristics and cues, including knowledge about the product category, country of origin, comparison to similar products, graphics and colors on product packaging (Kardes, Posavac & Cronley 2004, Bone & France 2001). The traits associated with a stereotypical advertising model should also act as a framework through which the consumer develops expectations of the levels of relevant product attributes.

Study 2 tests Hypothesis 1B, that a product advertised by a model who is a member of a stereotyped group will be perceived as having product attributes that are more associated with the stereotype than if the same product is advertised by a model who is a member of a stereotyped group; and Hypothesis 5B, that stereotype transfer will have an effect separate from the effect of inferences about the product's perceived target market.

Pretests

Two pretests were completed to (1) find a product category that was neutral with regards to gender associations; and (2) find attributes of the chosen product that are associated primarily

with males or females. To find a product category that was neutral with regards to gender associations, the first pretest from Study 1 was re-examined. This pretest had been completed in two parts. Part 1, with 19 participants (68% male, average age 31), had examined whether various product categories are associated with both women and men, neither women nor men, only women, or only men. Part 2, with 41 participants (63% male, average age 33) had examined the level of involvement for men and women with a variety of product categories. The pretest found that coffee is a product category that is equally involving for both men and women (M_{men} = 4.22, M_{women} = 4.72, $F = 0.81$, $p = 0.37$) and is equally associated with both men and women (14/19; 74% indicated that they associated coffee with both men and women or neither men nor women.) Next, a pretest was completed to determine which attributes of coffee are more strongly associated with men or with women. First, 20 participants recruited from MTurk (40% male, average age 34) were asked in an open-ended question to list at least three attributes that they look for when purchasing a brand of coffee to make at home. Next, they were asked in two questions to list "some attributes of coffee that would make you think the coffee is primarily for women [men]." From this survey, a list of potential coffee attributes was generated for the second product attribute pretest, where 30 participants (50% male, average age 32.9) were asked to identify for each attribute whether they are more likely to associate the attribute more with men, more with women, or with both men and women equally. From this pretest, several attributes were identified that are associated more with one gender than the other: women were associated with weak coffee, decaffeinated coffee, and flavored coffee while men were associated with strong coffee, highly caffeinated coffee, and bitter coffee. Both genders were equally associated with smooth coffee and aromatic coffee. Finally, to ensure that the advertisements do not indicate a target market, the advertisements were pretested. Forty

participants (67% male, average age 29.6) were recruited from Mturk and asked to view an advertisement for coffee (featuring either a male barista or a female barista), and asked who they believe is the target market for the coffee: men, women, neither men nor women, or both men and women. Regardless of whether the advertisement featured a male or female model, 60% of participants inferred that the target market was both men and women, and 30% inferred that it was women only. So the gender of the ad model, when the ad model is purported to be a company employee, should not affect the perceived target market for the advertisement.

Participants and Design

Participants (N = 151) were recruited from MTurk and offered $0.25 to participate in a 5 minute study. Participants ranged in age from 19 to 66 (*M* = 31.5), and 69% were male. The study was a 2 (Ad Model Stereotype: male, female) x 2 (Type of model: consumer, employee) between-subjects design with a no model control condition.

Procedure

Participants were asked to view an advertisement which varied only by the characteristics of the advertising model. Participants saw an advertisement featuring a model who was either male or female, and either a company employee (a barista) or a customer. The advertisement for the control condition featured no ad model (see Appendix 2 for advertisements and questionnaire screenshots). After viewing the advertisement, participants were asked to rate their expectations of the product attributes on six product characteristics on 7-point scales: Strength (not strong at all to very strong), Caffeine content (not highly caffeinated to highly caffeinated), Bitterness (Not bitter at all to Very bitter), Availability of Flavored versions (unlikely to likely), Weakness (not weak at all to very weak), Decaffeination (not decaffeinated to decaffeinated), Aromatic (Not at all aromatic to Very aromatic), and Smoothness (Not at all

smooth to Very smooth). They were next asked to rate the brand's personality using the masculine and feminine brand personality scales (Grohmann 2009). At the end of the study, participants were asked to rate whether they believe the target market for the coffee brand is primarily for men or women (7-point scale where 1 was "only women," 7 was "only men" and "both" was the mid-point).

Covariates

Five potential covariates were collected. Participant age and gender were collected for demographic purposes. In addition, brand attitude and ad believability were collected to control for any potential differences in how realistic the advertisement was and in liking of the brand due to the different advertising models. Familiarity with the product was also measured to account for individual differences that may exist in prior knowledge.

Results

First, the dependent variables were examined for reliability. The two brand personality scales, Masculine Brand Personality (adventurous, aggressive, brave, daring, dominant, sturdy) and Feminine Brand Personality (expresses tender feelings, fragile, graceful, sensitive, sweet, tender), were found to be reliable (MBP: $\alpha = 0.86$, FBP: $\alpha = 0.82$). Since I expected some of the product attributes to be correlated, I first ran a principal components analysis with varimax rotation to reduce the number of dependent variables (see Appendix 2 for rotated factor pattern). After removing one variable that did not load on either component (Flavored; loadings of -0.04 and -0.08) the principal components analysis revealed a 2-factor solution, with Smooth, Aromatic and Bitter loading as the first component, and Caffeinated, Weak, Decaffeinated and Strong loading as the second component. For ease of interpretation, decaffeinated and weak were reverse coded. The first component (smooth, aromatic, and bitter) will be referred to as Taste-

Related Attributes, and the second component (caffeinated, weak, decaffeinated, and strong) will be referred to as Strength-Related Attributes.

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender, participant age, and familiarity with the product (ps > 0.12). Thus these variables were excluded from subsequent analyses. Brand attitude and ad believability both had significant main effects on brand personality (Brand Attitude: $F(1,141) = 19.0$, $p < 0.0001$; Ad Believability: $F(1,141) = 3.68$, $p = 0.057$). Brand attitude also had a significant main effect on ratings of product attributes ($F(1,141) = 24.37$, $p < 0.0001$), but not ad believability ($F(1,141) = 2.38$, $p = 0.12$). Thus brand attitude and ad believability will be included as covariates in subsequent analysis of brand personality, and brand attitude but not ad believability will be included as a covariate in subsequent analysis of product attributes.

To test H1B, that stereotype associations can transfer to product attributes, I examined the effect of model gender and model type on the product attributes. From the pretest, higher ratings on the strength-related attributes would indicate a more masculine-associated coffee, while lower ratings would indicate a more feminine-associated coffee. The taste-related attributes should be unrelated to gender associations, and thus should be unaffected by the ad model. Finding a main effect of model gender for the strength-related attributes but not the taste-related attributes would have provided support for the hypothesis that the ad model stereotype influences perceptions of product attributes. A 2 (model gender: male, female) x 2 (model type: customer, employee) ANCOVA with attribute type (taste-related and strength-related) as a

repeated measure, and brand attitude as a covariates[3] revealed no within-subjects interaction of attribute type and model gender ($F(1,145) = 0.07$, $p = 0.80$), no within-subjects interaction of attribute type and model type ($F(1,145) = 1.69$, $p = 0.19$), and no within-subjects three-way interaction of attribute type, model type and model gender ($F(1,145) = 1.88$, $p = 0.17$). The analysis revealed no main effects of model gender or model type for either attribute type (ps > 0.2), and no significant interaction of model gender and model type for either attribute type (ps > 0.2). See Appendix 2 for means and standard deviations. These results do not support hypothesis 1B, that stereotype associations can transfer to perception of product attributes.

Next, to test whether this study replicated the effects found in Study 1, where the masculine and feminine brand personality were affected by the stereotype of the advertising model, I assessed the effect of model gender and model type on masculine brand personality and feminine brand personality. A 2 (model gender: male, female) x 2 (model type: customer, employee) ANCOVA with brand personality dimension (masculine and feminine) as a repeated measure, and ad believability and brand attitude as covariates[4] revealed a marginal within-subjects interaction of model gender and brand personality dimension ($F(1,144) = 3.40$, $p = 0.067$), and no within-subjects interaction of brand personality dimension and model type or 3-way interaction of model gender, model type, and brand personality dimensions (ps > 0.5). There was a marginal main effect of model gender on perceptions of feminine brand personality ($M_{\text{Female Model}} = 4.19$, $M_{\text{Male Model}} = 3.85$, $F(1,144) = 3.35$, $p = 0.069$), and no effect of model

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[3] Analysis without the covariates reported here. There was no within-subjects interaction of attribute type and model gender, no within-subjects interaction of attribute type and model type, and no within-subjects three-way interaction of attribute type, model type and model gender (ps > 0.16).

[4] Excluding the covariates from the analysis made no material difference. Analysis without the covariates reported here. There was a marginal within-subjects interaction of brand personality dimension and model gender ($F(1,146) = 3.14$, $p = 0.079$), and no within-subjects interaction of brand personality dimension and model type or 3-way interaction of model gender, model type, and brand personality dimensions (ps > 0.5). There was a marginal main effect of model gender on perceptions of feminine brand personality ($F(1,146) = 3.51$, $p = 0.063$), and no effect of model gender on perceptions of masculine brand personality ($F(1,146) = 0.29$, $p = 0.58$).

gender on perceptions of masculine brand personality ($M_{\text{Female Model}} = 4.20$, $M_{\text{Male Model}} = 4.31$, $F(1,144) = 0.42$, $p = 0.51$). See Appendix 2 for means and standard deviations. As expected, there was no main effect of type of model, whether the model was a customer or a barista did not influence perceptions of masculine or feminine brand personality, and there was no interaction of model type and model gender (ps > 0.4). This result suggests that the gender of the advertising model may have had a small effect on perceptions of feminine brand personality but no effect on perceptions of masculine brand personality.

To test Hypothesis 5B, that the perceived target market may influence the ratings of product attributes, I first assessed the effect of model gender and model type on perceived target market. A 2 (model gender: male, female) x 2 (model type: customer, employee) ANOVA revealed a significant main effect of model gender on perceptions of target market ($M_{\text{Female Model}} = 3.83$, $M_{\text{Male Model}} = 4.10$, $F(1,146) = 4.28$, $p = 0.040$) and no effect of model type or interaction of model gender and model type (ps > 0.2). Since higher values indicate a perception that the target market is mostly men, and lower values indicate a perception that the target market is mostly women, this result suggests that gender of the advertising model matches the gender of the perceived target market[5]. See Appendix 2 for tables of means and standard deviations.

Because the gender of the advertising model had no significant effect on the product attributes, the planned mediation analysis to test whether the effect of ad model stereotype on perception of product attributes is caused by an inference about the target market was not run.

Discussion

This study did not support the hypotheses that the stereotype of the advertising model would transfer to the product attributes of the advertised product. This study also failed to

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[5] This is, however, a small effect (the difference in the 7-point scale is only 0.27), and η^2 is 0.028.

replicate the finding in Study 1 that the stereotype of the advertising model would transfer to the brand personality of the advertised product. The major difference between Studies 1A and 1B and Study 2 is the specificity and strength of the stereotype of the advertising model. In Studies 1A and 1B, specific gender sub-stereotypes were examined: businessmen and stay-at-home dads, and businesswomen and stay-at-home moms. In Study 2 on the other hand, very general gender stereotypes were used: simply male and female. It is possible that in order for transfer to occur, the stereotype must be specific and strongly held.

In Study 3, I test again whether stereotype associations can transfer to the product attributes of an advertised product using a stronger stereotype and more strongly held stereotype associations: Asian men and math ability, and African-American men and strength.

STUDY 3: STEREOTYPE-PRODUCT RELEVANCE

Study 3 examines whether stereotype-product match determines which specific stereotype associations transfer to the product. The goal of study 3 is to examine whether the product advertised serves as a context to increase the transfer of stereotype associations that are along the same dimension as the product associations. Product categories and established brands, like stereotypes, have their own set of known associations. I propose that, where these associations are along the same dimension, the stereotype associations are more likely to become active and to transfer to the product. The product category will serve as a context to increase the activation of the relevant stereotypic associations.

One consideration for the stereotype transfer hypothesis is whether there must be a match between the product and the stereotype in order for the association to transfer. Is it the case that only those associations that positively overlap will transfer to the brand personality of the

advertised product or cue product inferences? In celebrity meaning transfer, a match between the celebrity endorser and product increased meaning transfer – for example, a physically attractive endorser was found to enhance the image of products that were related to attractiveness, but not the image of products that were unrelated to attractiveness (Kahle & Homer 1985, Kamins 1990). Similarly, I propose that when the stereotype associations activated by a stereotypical model are the on the same dimension as a product association, the dimension will be activated and more likely to affect inferences about the product's attributes along the same dimension.

This study tests Hypothesis 2, that an advertising model who is a member of a stereotyped group will lead to the advertised product having perceptions of brand personality traits that are more associated with the stereotype when the stereotype-related traits are relevant to the consumer's schema for the product than when they are irrelevant. This study will also test Hypothesis 1B again, that a product advertised by a model who is a member of a stereotyped group will be perceived as having product attributes that are more associated with the stereotype than if the same product is advertised by a model who is not a member of a stereotyped group.

Pretests

Pretests were run first to confirm the content of the African-American male and Asian male stereotypes. First, 40 Mturk participants (75% male, average age 29.4) were asked to answer an open-ended question about the traits, behaviors and characteristics associated with African-American men (n = 16) or Asian-American men (n = 24). From these open-ended questions, African-American men were most often associated with being lazy, loud, aggressive, strong, poor, uneducated, violent, and scary, and Asian-American men were associated with being smart, hard-working, good at math, intelligent, quiet, good with technology, nerdy, passive, educated, reserved, and shy. From this pretest, the positive associations with each group

were retained and pretested a second time. From the associations with African-Americans, the concept of strength was retained, and expanded to include ruggedness and toughness. From the associations with Asian males, the concepts of intelligence and technological abilities were retained and expanded to include sophistication. Two concepts (fashionable and outdoorsy) that were expected to be unrelated to either stereotype were also including for comparison purposes. Forty Mturk participants (67% male, average age 29.6) were asked to rate either African-American or Asian males on these eight traits (Strong, Tough, Rugged, Smart, High Tech, Sophisticated, Outdoorsy, and Fashionable) on 5-point scales from Not at All to Extremely. This pretest confirmed the associations with the African-American and Asian stereotypes: African-American men were rated as significantly higher than Asian-American men on the traits Rugged, Strong, and Tough ($ps < 0.0001$), and Asian-American men were rated as significantly higher than African-American men on the traits High Tech, Smart, and Sophisticated ($ps < 0.01$). Asian-American men and African-American men were not perceived as significantly different on Outdoorsy and Fashionable (Outdoorsy $p = 0.139$, Fashionable $p = 0.71$). Next, two products (smartphones and smartphone cases) were tested for relevance on three African-American associated attributes (Rugged, Strong, and Tough), three Asian associated attributes (High Tech, Smart, and Sophisticated), and two attributes that are not associated with either stereotype (Stylish and Fashionable). The attribute Outdoorsy was excluded because it was not expected to be relevant to the products in question, and replaced by Stylish. The goal of this pretest was to identify one product for which the African-American related attributes but not the Asian related attributes were relevant and one product for which the Asian related attributes were relevant but not the African-American related attributes. Fifty participants were recruited from Mturk (54% male, average age: 34.5) and asked to think about either smartphones or protective cases for

smartphones in general and to rate how relevant each attribute is to the product ($1 - 7$ scales, Not At All to Very). As expected, the Asian related attributes combined were rated as more relevant for the smartphone than the African-American related attributes ($M_{\text{African-American Attributes}} = 3.83$, $M_{\text{Asian Attributes}} = 5.32$, $F(1,48) = 10.89$, $p = 0.0018$), and the African-American related attributes were rated as more relevant for the smartphone case than the Asian related attributes ($M_{\text{African-American Attributes}} = 5.72$, $M_{\text{Asian Attributes}} = 3.86$, $F(1,48) = 26.6$, $p < 0.0001$). The stereotype-unrelated attributes were equally relevant for both the smartphone and the smartphone case ($M_{\text{smartphone}} = 5.02$, $M_{\text{case}} = 5.47$, $F(1,48) = 1.18$, $p = 0.28$).

Participants and Design

Participants were recruited from MTurk (N = 181) and offered \$0.25 to complete the study. Participants were 67% male and aged between 18 and 72 ($M = 30.94$). The design is a 2 (Ad Model Stereotype: African-American male, Asian male) x 2 (product: smartphone, smartphone case) between-subjects design with a no ad model control condition.

Procedure

Participants viewed an advertisement for either the fictitious XOLO X900 smartphone or the fictitious XOLO X900 smartphone case. The advertisement varied only by the characteristics of the advertising model: the model was either an African-American man or an Asian man (see Appendix 3 for the advertisements). There was also a control condition in which participants viewed the same advertisement with no ad model. After viewing the advertisement, participants were asked to rate their expectations of the product on the following product attributes: tough, strong, rugged, smart, high tech, sophisticated, stylish and fashionable. From the pretests, tough, strong, and rugged were expected to be associated with the African-American stereotype and to be relevant to the smartphone case while high tech, smart, and sophisticated were expected to be

associated with the Asian-American stereotype and to be relevant to the smartphone. Stylish and fashionable were expected to be unrelated to both the African-American and Asian-American stereotypes. After rating the product's attributes, participants were asked to identify who they believed the advertisement was targeting from a categorical list (Primarily Caucasians, Primarily African Americans, Primarily Asians, or All Races Equally). Finally, they rated believability of the advertisement, completed an attention check that asked them to identify the race and gender of the model they saw in the advertisement, and rated their familiarity with smartphones and smartphone cases, and reported their gender and age. See Appendix 3 for advertisements and questionnaire screenshots.

Covariates

Participant age and gender were collected primarily for demographic purposes. In addition, ad believability was collected to control for any potential differences in how realistic the advertisement was due to the different advertising models. Familiarity with the two products (smartphones and smartphone cases) was also collected using two 7-point ratings scales from Not Familiar at All to Very Familiar in order to account for any potential differences in prior knowledge.

Results

First, I examined the stereotype-related and stereotype-unrelated attributes for discriminant validity. Theoretically, some of these product attributes should be correlated with each other, and thus treated as one dependent variable rather than separate. To reduce the number of variables, I ran a principal components analysis with varimax rotation. The principal components analysis revealed two principal components (see Appendix 3 for rotated factor pattern). The first component corresponded to the Asian stereotype and included Sophisticated,

High Tech, Smart, Stylish, and Fashionable. This component will be referred to as "Asian related attributes." The second component corresponded to the African-American stereotype and included Tough, Strong, and Rugged. This component will be referred to as "African-American related attributes." Stylish and Fashionable had been pretested to be unrelated to the Asian stereotype, so it was surprising to find it loading with the Asian stereotype. The analysis was run both with the two components identified in the principal components analysis, and with the three predicted components – African-American related attributes (strong, tough, and rugged), Asian-related attributes (smart, high tech, sophisticated), and stereotype-unrelated attributes (stylish and fashionable[6]. Using three versus two components made no material difference in the analysis.

As a check that participants had focused sufficient attention on the advertisement, participants were asked to identify the race of the advertising model at the end of the study. Thirty-two participants failed to correctly identify the race of the model in the advertisement. The analysis was run with and without those participants, but since their removal made no material difference, they were not removed from the reported analysis[7]. It is possible that those participants misunderstood the question, and instead identified their own race and gender.

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[6] Analysis with the 3 predicted components, African-American related, Asian related and unrelated reported here. I ran a 2-way ANCOVA with type of attribute (Asian-related, African-American related, and stereotype-unrelated) as a repeated measure, and ad believability and age of participant as covariates. There was a significant within-subjects interaction of attribute type and product type ($F(2,346) = 25.90$, $p > 0.0001$), and no within-subjects interaction of attribute type and model race or 3-way interaction of attribute type, model race and product type ($ps > 0.5$). The 2-way ANCOVA for African-American related attributes revealed no main effect of ad model, but a significant main effect of product type and a significant interaction of model and product type (Ad Model: $F(2,173) = 0.73$, $p = 0.49$; Product Type: $F(1,173) = 12.16$, $p = 0.0006$; Ad Model x Product Type Interaction: $F(2,173) = 4.27$, $p = 0.016$). An examination of the contrasts revealed that the ad model by product type interaction was driven by higher ratings of African-American related attributes for the no model condition when the product type was a smartphone (Contrast No Model vs African-American model, smartphone: $M_{no\ model} = 4.01$, $M_{African-American} = 3.241$, $F(1,173) = 5.46$, $p = 0.021$; Contrast No Model vs Asian model, smartphone: $M_{no\ model} = 4.01$, $M_{Asian} = 3.244$, $F(1,173) = 5.72$, $p = 0.018$; all other contrasts $ps > 0.12$). For Asian-related attributes there was a main effect of product type ($F(1,173) = 18.19$, $p < 0.0001$), and no other significant effects ($ps > 0.21$). For unrelated attributes, there were no significant effects ($ps > 0.21$).

[7] Analysis excluding the 32 participants who failed to correctly identify the race of the model reported here. There was a significant within-subjects interaction of attribute type and product type ($F(1,140) = 26.31$, $p > 0.0001$), and no within-subjects interaction of attribute type and model race or 3-way interaction of attribute type, model race and product type ($ps > 0.3$).

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender or familiarity with the product category (ps > 0.4). Thus these variables were excluded from subsequent analyses. Ad believability and participant age both had significant main effects on ratings of product attributes (Ad Believability: $F(1,173) = 67.32$, $p < 0.0001$; Participant Age: $F(1,173 = 5.69$, $p = 0.018)$. Thus these two variables were included in the subsequent analysis.

To test whether stereotype transfer is more likely to occur when there is a match between the consumer's schema for the product and the advertising model's stereotype associations, I ran a 2-way ANCOVA with type of attribute (Asian-related and African-American related) as a repeated measure, and ad believability and age of participant as covariates[8]. The repeated measures analysis revealed only a within-subjects interaction of attribute type and product type ($F(1,173) = 30.70$, $p < 0.0001$), shown in Figure 4. The interactions of the attribute type and ad model and attribute type by ad model and product type are both non-significant (ps > 0.4). A significant interaction between ad model and type of product such that the African-American model increased ratings on the African-American related attributes for the protective case, but not the smartphone, and the Asian model increased ratings of Asian-related attributes for the smartphone, but not the protective case would have supported the hypothesis that the match between product schema and stereotype associations increases the likelihood of stereotype transfer. Analysis of the African-American related attributes revealed no main effect of ad model, but a significant main effect of product type and a significant interaction of model and

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[8] Excluding the covariates from the analysis did not materially affect the results. The repeated measures analysis revealed only a within-subjects interaction of attribute type and product type ($F(1,175) = 30.94$, $p < 0.0001$). The interactions of the attribute type and ad model and attribute type by ad model and product type are both non-significant (ps > 0.4).

product type (Ad Model: $F(2,173) = 0.73$, $p = 0.49$; Product Type: $F(1,173) = 17.41$, $p < 0.0001$; Ad Model x Product Type Interaction: $F(2,173) = 4.58$, $p = 0.012$). The main effect of product type confirms the pretest that the smartphone case should be higher on African-American related attributes than the smartphone ($M_{case} = 4.27$, $M_{phone} = 3.50$). An examination of the contrasts revealed that the ad model by product type interaction was not driven by stereotype-product relevance as expected but rather by higher ratings of African-American related attributes for the no model condition when the product type was a smartphone (Contrast No Model vs African-American model, smartphone: $M_{no\ model} = 4.01$, $M_{African-American} = 3.241$, $F(1,173) = 5.46$, $p = 0.021$; Contrast No Model vs Asian model, smartphone: $M_{no\ model} = 4.01$, $M_{Asian} = 3.244$, $F(1,173) = 5.72$, $p = 0.018$; all other contrasts ps > 0.12). Tables of means and standard deviations can be found in Appendix 3. For the Asian-related attributes, there was only a significant main effect of product type ($F(1,173) = 7.98$, $p = 0.0053$), with no significant effect of ad model and no significant interaction of ad model and product type (ps > 0.26). The main effect of product type confirms the pretest that the smartphone should be higher on Asian-related attributes than the smartphone case ($M_{case} = 4.23$, $M_{phone} = 4.59$).
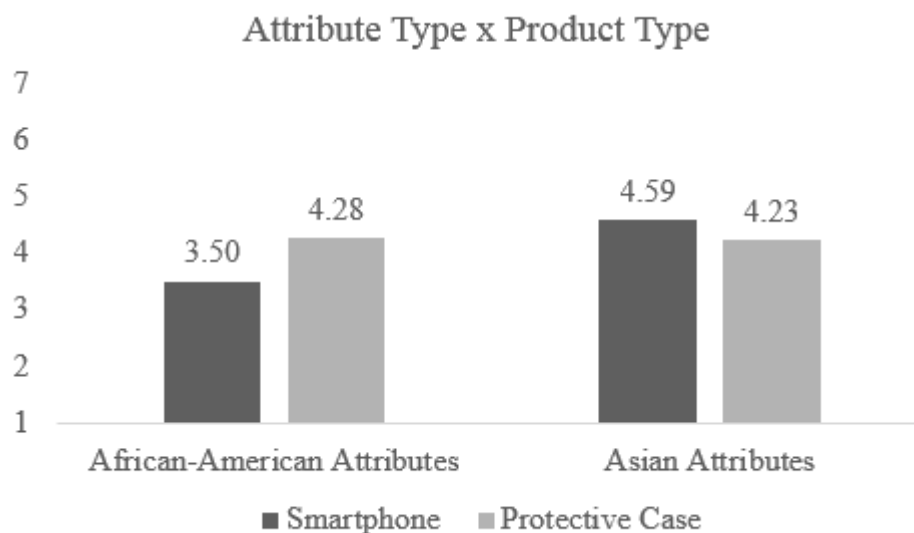
Figure 4

Discussion

This study failed to provide support for the stereotype transfer effect, and also failed to provide support for the importance of stereotype-product relevance. The presence of an African-American model in the advertisement did not affect perceptions that the smartphone protective case was strong, tough, and rugged, nor did it affect the perception of the smartphone on those attributes. Although pretests indicated that there would be a match between the African-American stereotype associations of tough, strong, and rugged and the product schema for the smartphone protective case, no evidence of stereotype transfer was found. Similarly, the Asian model did not affect perceptions that either the smartphone or the smartphone protective case was smart, high tech, and sophisticated.

In the next study, Hypothesis 1B will be tested again, as thus far the studies have no supported the hypothesis that stereotype associations can transfer to product attributes. It will also test cognitive load as a moderator of stereotype priming.

STUDY 4A: EFFORT AND PRIMING

Study 4A examines the role of attentional resources in stereotype transfer and attempts to rule out semantic priming as an alternative explanation. The goal of study 4A is to test (1) whether stereotype transfer is an effortful process that requires availability of cognitive resources, and (2) whether the effects of stereotype transfer are simply an artifact of priming. Given that semantic priming effects decay quickly (Higgins, Bargh & Lombardi 1985), introducing a brief (5 – 10 minute) delay between viewing the advertisement and evaluating the product should provide a test of whether stereotype transfer is an effect of semantic priming. If the effect persists across the delay, then it would rule out semantic priming as a mechanism. As for the question of whether stereotype transfer is an effortful or automatic process, the evidence in the literature is inconsistent. From the point of view of stereotype activation and application, stereotype activation is thought to be a fairly automatic process designed to reduce the need for expending cognitive resources and process information more efficiently that can be controlled or inhibited given sufficient motivation (Blair 2002). Stereotype transfer may be similar in that it could be an automatic process, in which case we would expect stereotype associations to transfer from the ad model to the advertised product even under high cognitive load, when processing resources are low. On the other hand, evidence from the meaning transfer literature indicates that meaning transfer in advertisements may be an effortful process. Miller & Allen (2012) show that celebrity meaning transfer occurs because of changes in inferential beliefs about the product to align with perceptions of the celebrity. Since changing inferential beliefs is effortful, cognitive load should moderate stereotype transfer.

This study again tests Hypothesis 1B, that a product advertised by a model that fits a stereotype will be perceived as having product attributes that are more associated with the

stereotype than if the same product is advertised by a model that does not fit a stereotype. It also tests Hypothesis 5A, that the stereotype transfer effect will persist over a delay, and Hypothesis 3, that products advertised by a stereotypical model will be perceived as having product attributes and brand personality traits that are more associated with the stereotype when the participant is not cognitively busy than when the participant is cognitively busy.

Pretests

First, a photograph of a slightly heavy woman was manipulated using GIMP image manipulation software to appear thinner in one version of the image and more overweight in a second version of the image. The two resulting model images were then pretested for weight perceptions, using 43 participants recruited from Mturk. Twenty-two participants rated perceptions of the overweight model's weight, and 21 rated perceptions of the normal weight model's weight on a 19-point scale with 1 being Underweight, 7 being Normal Weight, 13 being Overweight, and 19 being Obese. The overweight model was rated as significantly more overweight than the normal weight model ($M_{overweight} = 12.72$, $M_{normalweight} = 7.38$, $F(1,41) = 72.65$, $p < 0.0001$), and the overweight model's perceived weight was not significantly different from the scale point for Overweight ($t = -0.59$, $p = 0.56$). Next, a variety of cookie attributes were pretested in conjunction with the overweight and normal weight ad models. Forty Mturk participants were asked to imagine that the woman in the photo – either the overweight model or the normal weight model – was describing her favorite cookie, and to rate their expectations of the woman's favorite cookie on eight attributes measured on 7 point scales (from very low calorie to very high calorie, very poor nutrition to very good nutrition, very unhealthy to very healthy, not filling to very filling, not indulgent to very indulgent, very inconvenient to very convenient, not tasty to very tasty, and not a rich flavor to very rich flavor). The first five

attributes (high calorie, poor nutrition, unhealthy, filling, and indulgent) were chosen because they were expected to be related to the overweight stereotype. The other three attributes were expected to be unrelated to the overweight stereotype. The overweight stereotype includes the concept that overweight people overeat indulgent foods (Campbell & Mohr 2011). Indulgent foods should be foods that are higher calorie, lower nutrition, less healthy, and more indulgent. Since higher calorie foods also tend to be more filling, filling was expected to be related to the overweight stereotype as well. When asked about the cookie preferred by the overweight model, participants ($n = 21$) rated the cookie as higher calorie, less nutritious, less healthy, more indulgent, and having a richer flavor than the cookie preferred by the normal weight model ($n = 19$; ps < 0.021). Participants rated the cookies as equally tasty, convenient, and filling (ps > 0.3). Although these pretest results indicated that the overweight person would prefer a cookie that was higher calorie, less nutritious, less healthy, more indulgent, and having a richer flavor than the normal weight person, there is no theoretical reason that would associate rich flavor with the overweight stereotype. Because filling was expected to be associated with the overweight stereotype but was not, it will be excluded from the attributes in the study design.

Participants and Design

Participants ($N = 286$) were recruited from an undergraduate subject pool and received partial course credit for their participation. Participants were 55% male and aged between 18 and 32 ($M = 19.97$). This study is a 2 (Ad Model: stereotypical, non-stereotypical) x 2 (Cognitive Load: high, low) x 2 (Timing of DV: delay, no delay) between-subjects design with a no-model, no delay, low cognitive load control condition.

Procedure

Participants were first randomly assigned to cognitive load condition. Participants in the high cognitive load condition were asked to memorize a number that is difficult to recall (87173682), while participants in the low cognitive load condition were asked to memorize a number that is easy to recall (88888888). They were given 15 seconds to memorize the number, and asked to keep this number in mind while completing the first task. Next, participants viewed an advertisement for an unknown brand of cookies that contained either an overweight or a normal weight ad model, and were asked to rate their attitude toward the advertisement (see Appendix 4A for advertisements). After viewing the advertisement, participants reported the number they memorized earlier. Finally, participants were sorted into timing condition. Participants in the no-delay condition immediately rated the product advertised on a variety of product attributes. Participants in the delay condition completed an unrelated study for 10 minutes before completing the product attribute ratings. The product attributes (tasty, high calorie, poor nutrition, convenient, unhealthy, indulgent, rich flavor, crunchy, and chewy) were rated on the same 7-point scales as on the pretest. Chewy and crunchy were included as control attributes that should be unrelated to the overweight stereotype. Participants in the no-model control condition were sorted into the low cognitive load and no-delay conditions, so they were asked to memorize the easy to recall number, and then asked to rate the advertised cookies immediately after viewing the advertisement. Finally, at the end of the study, all participants completed the Short Form Fat Phobia Scale (Bacon, Scheltema & Robinson 2001) to measure how strongly they endorse the overweight stereotype, and answered demographic questions include age, gender, height, and current and ideal weight. See Appendix 4A for advertisements screenshots of the questionnaire.

Covariates

      Participant age and gender were collected primarily for demographic purposes. In addition, attitude toward the ad was collected to control for any potential differences in attitude toward the advertisement due to the different advertising models. Participant actual weight and ideal weight were also collected to control for potential effects of participants desiring to gain or lose weight. Participants also completed a scale measuring fat phobia to control for potential individual differences in the strength of overweight stereotype.

Results

      Theoretically, some of the product attributes should be correlated with each other, and thus treated as one variable rather than separate. To reduce the number of variables, I ran a principal components analysis with varimax rotation. The principal components analysis revealed three principal components with Indulgent, Rich Flavor, and Tasty loading as one component, High Calorie, Poor Nutrition and Unhealthy loading as the second component, and Crunchy and Chewy loading as the third component (See Appendix 4A for rotated factor pattern.) The variable Convenient, which was intended to be a stereotype-unrelated variable did not load on any component, so was excluded from the analysis. For the analysis, these three components will be referred to as Unhealthy-Related Attributes (high calorie, poor nutrition, and unhealthy), Taste-Related Attributes (indulgent, rich flavor, and tasty), and Texture Attributes (crunchy and chewy).

      Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender, whether participants' ideal weight was higher, lower, or the same as their actual weight, and ratings on the fat phobia scale (ps > 0.3).

Thus these variables were excluded from subsequent analyses. Attitude toward the ad and participant age both had significant main effects on ratings of product attributes (Attitude Toward the Ad: $F(1,271) = 11.43$, $p = 0.0008$; Participant Age: $F(1,271 = 7.41$, $p = 0.007$). Thus these two variables were included in the subsequent analysis.

To test for evidence of stereotype transfer, whether the transfer is effortful, and whether the effect persists across a delay, I ran a three-way ANCOVA with attribute type (taste-related attributes, unhealthy-related attributes, and texture attributes) as a repeated measure and attitude toward the ad and participant age as covariates. The results are not materially different when the model is run without the two covariates[9]. A significant within-subjects interaction of attribute type, model weight and cognitive load provides evidence of stereotype transfer and the role of cognitive load ($F(2,550) = 3.87$, $p = 0.021$). Figure 5 shows the 3-way attribute type by model weight by cognitive load interaction. There were no other significant within-subjects interactions with attribute type (Attribute type x model weight: $F(4,550) = 0.88$, $p = 0.47$; Attribute type x delay: $F(2,550) = 0.66$, $p = 0.52$; Attribute type x model weight x delay: $F(2,550) = 0.42$, $p = 0.66$; Attribute type x model weight x cognitive load x delay: $F(4,550) = 1.25$, $p = 0.29$).

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[9] Results from model without covariates reported here. There is a marginal within subjects interaction of attribute type and model weight ($F(4,554) = 2.10$, $p = 0.080$), and a significant within subjects interaction of attribute type, model weight, and cognitive load ($F(2,554) = 3.42$, $p = 0.033$). There were no other significant within-subjects interactions with attribute type ($ps > 0.29$). For the unhealthy-related attributes variable, the ANCOVA revealed a marginal main effect of model ($F(2,277) = 2.76$, $p = 0.065$), a significant interaction of model weight and cognitive load condition ($M_{\text{normal high load}} = 4.87$, $M_{\text{normal low load}} = 4.96$, $M_{\text{overweight high load}} = 5.44$, $M_{\text{overweight low load}} = 5.01$, $F(1,277) = 3.75$, $p = 0.054$), and a marginal main effect of delay ($M_{\text{no delay}} = 5.15$, $M_{\text{delay}} = 4.95$, $F(1,277) = 3.17$, $p = 0.076$). Contrasts indicate that the cookies are rated more highly on unhealthy-related attributes when the model is overweight ($M = 5.22$) than when the model is normal weight ($M = 4.91$, $F(1,277) = 5.24$, $p = 0.023$), and that this main effect is qualified by the interaction of model weight and cognitive load such that the overweight model leads to higher ratings on unhealthy-related attributes under high cognitive load ($F(1,277) = 9.11$, $p = 0.003$), but not under low cognitive load ($F(1,277) = 0.06$, $p = 0.80$).

Attribute Type x Model Weight x Cognitive Load
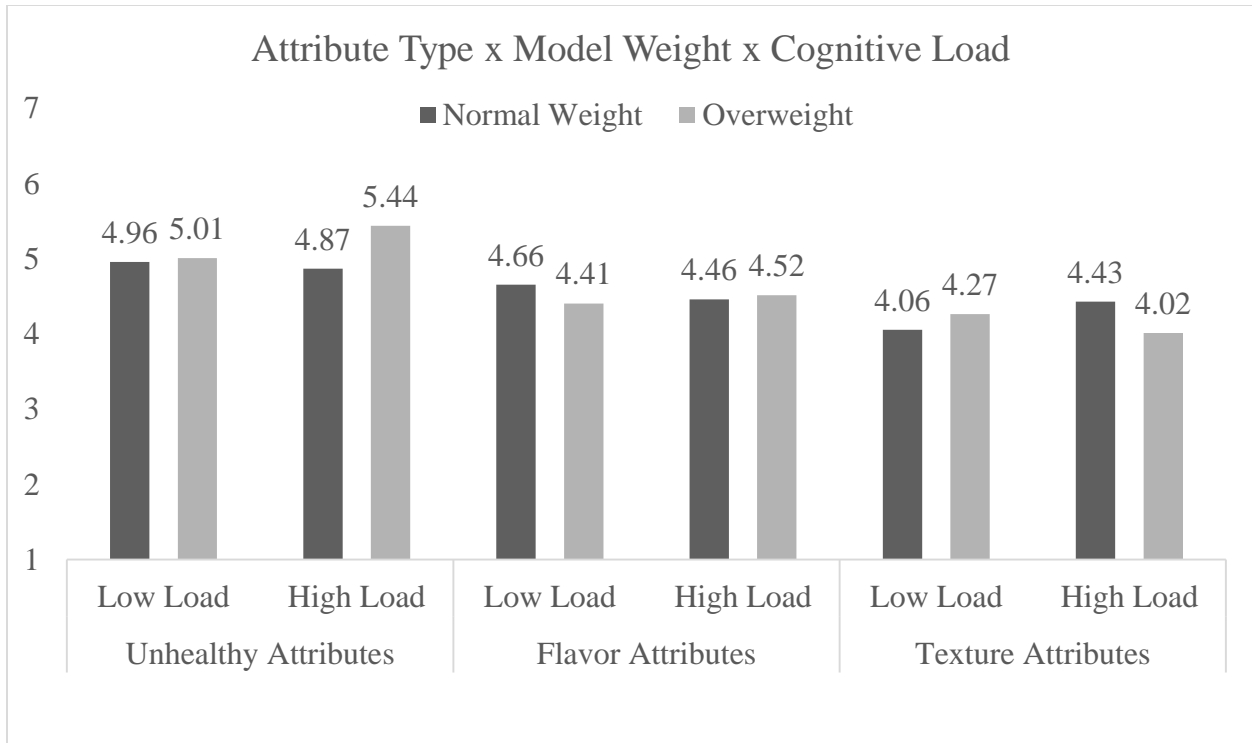
Figure 5

The significant interaction of attribute type, model weight, and cognitive load supports Hypothesis 1B, that stereotype associations can transfer to product attributes, and provides evidence about Hypothesis 3, the role of cognitive load. Evidence for stereotype transfer was expected to be found only in the unhealthy-related attributes: that they would be higher when the model was overweight than when the model was normal weight or when there was no model. Higher values on the unhealthy-related attributes indicate the cookie is perceived as being high calorie, providing poorer nutrition, and being less healthy. For the unhealthy-related attributes variable, the ANCOVA revealed a significant interaction of model weight and cognitive load condition ($M_{\text{normal high load}} = 4.87$, $M_{\text{normal low load}} = 4.96$, $M_{\text{overweight high load}} = 5.44$, $M_{\text{overweight low load}} = 5.01$, $F(1,275) = 3.80$, $p = 0.053$; see Appendix 4 for means and standard deviations). The contrasts indicated that the cookies were rated as significantly higher on the unhealthy-related

attributes when the advertising model was overweight than when the advertising model was normal weight only under high cognitive load and not under low cognitive load (Contrast under high cognitive load: $M_{\text{normal high load}} = 4.87$, $M_{\text{overweight high load}} = 5.44$, $F(1,275) = 7.72$, $p = 0.006$; Contrast under low cognitive load: $M_{\text{normal low load}} = 4.96$, $M_{\text{overweight low load}} = 5.01$, $F(1,275) = 0.01$, $p = 0.99$). This result supports Hypothesis 1B, that stereotype associations can transfer to product attributes, and indicates that, contrary to Hypothesis 3, stereotype transfer is an automatic process that can be corrected for with sufficient cognitive resources.

As expected, the two attribute types that were predicted to be unrelated to the overweight stereotype, texture attributes and taste-related attributes, revealed no significant main effects or interactions (ps > 0.1). Given that taste, richness of flavor, crunchiness, and chewiness are not associations of the overweight stereotype, taste-related attributes and texture attributes were not expected to be influenced by the weight of the advertising model.

The lack of a significant interaction of attribute type, model weight and delay provides support for Hypothesis 5A, that stereotype transfer effects persist across a delay. The stereotype transfer effect is seen only in the ratings of product attributes that are related to the overweight stereotype, the unhealthy-related attributes. For the unhealthy-related attributes, the ANCOVA revealed a marginal main effect of delay ($M_{\text{no delay}} = 5.15$, $M_{\text{delay}} = 4.95$, $F(1,275) = 2.81$, $p = 0.095$). However, there is no interaction of model weight and delay ($F(1,275) = 1.85$, $p = 0.17$), and no significant three-way interaction of model weight, cognitive load, and delay ($F(1,275) = 1.69$, $p = 0.195$). The lack of interaction effects with delay indicate that the timing of the product attribute evaluations (whether they are completed immediately after viewing the advertisement or after a 5 to 10 minute delay) does not impact the effect of model weight. This supports

Hypothesis 5A, that the stereotype transfer effect persists across a delay, and provides evidence against the alternative explanation that stereotype transfer is an artifact of priming.

Discussion

The results of Study 4A provides the first evidence that ad model stereotype associations can transfer to product attributes, supporting Hypothesis 1B. It also provides evidence against Hypothesis 5A, the alternative explanation that the stereotype transfer effect is simply an artifact of priming. Since priming effects have a relatively brief duration, persistence of an effect across a delay provides evidence that the effect is not simply due to priming (Bargh, Lombardi & Higgins 1988).

The results also provide evidence that stereotype transfer is an automatic process, that it can occur when the availability of cognitive resources are low. This is contrary to Hypothesis 3, but is in line with evidence from the literature on stereotype application that stereotype application can be inhibited or controlled when a perceiver recognizes that the stereotype may be affecting his or her evaluations, or is otherwise motivated to avoid bias (Sherman, Macrae & Bodenhausen 2000, Blair 2002). It is possible that the lack of effects in Study 3 were due to participants' recognizing the link between the African-American and Asian stereotypes and protective cases and smartphones, and controlling for the potential bias. However there was no data collected in Study 3 to support or refute this explanation. Cognitive load effects will be tested again in Study 4B.

STUDY 4B: COGNITIVE LOAD

Study 4B provides a second examination of the role of attentional resources in stereotype transfer. The goal of study 4B is to test whether stereotype transfer is more likely to occur under high cognitive load than under low cognitive load. In Study 4A, stereotype transfer occurred only

under high cognitive load – under low cognitive load, there was no effect of advertising model. This study thus tests again Hypothesis 3, but predicting the opposite, that products advertised using a model who is a member of a stereotyped group will be perceived as having product attributes and brand personality traits that are more associated with the stereotype when the participant is cognitively busy than when the participant is not cognitively busy.

Pretests

This study tests math-related stereotypes, specifically that Asians are good at math and women are bad at math, in an advertisement for accounting services. Photos of an Asian man, a Caucasian man, and a Caucasian woman were pretested for friendliness, age, and conformity to the math-related stereotypes. The Caucasian man was chosen as a stereotype that is neutral toward math ability. Participants (n=73) were recruited from Mturk (60% male, average age 32.3) and asked to rate one of the photos on 7-point scales measuring friendliness, intelligence, education, math skills, and smartness. They were also asked to estimate the age of the person in the photo. The three photos chosen were not rated significantly different on friendliness or age (ps > 0.19). The Asian man was rated significantly higher than the Caucasian woman on the math- and intelligence-related stereotype associations: Intelligent, Educated, Smart, and Math Skills (Intelligent: $M_{Asian} = 5.50$, $M_{Woman} = 4.65$, $F(1,70) = 7.78$, $p = 0.006$; Educated: $M_{Asian} = 5.50$, $M_{Woman} = 4.77$, $F(1,70) = 5.97$, $p = 0.016$; Smart: $M_{Asian} = 5.38$, $M_{Woman} = 4.69$, $F(1,70) = 4.55$, $p = 0.034$; Math Skills: $M_{Asian} = 4.35$, $M_{Woman} = 3.52$, $F(1,70) = 4.11$, $p = 0.047$). The Caucasian man was not rated significantly different from either the Asian man or the Caucasian woman on any of the math- and intelligence-related stereotype associations (Caucasian Man: $M_{Intelligent} = 5.09$, $M_{Educated} = 5.24$, $M_{Smart} = 5.14$, $M_{Math\ Skills} = 4.05$, $ps > 0.2$). A pretest was also conducted to determine a list of service attributes that are associated with math skills.

Participants (N = 41, average age 35, 50% male) were asked, "In the following list are several possible outcomes of having your tax return prepared by an Accounting Firm. For each possible outcome in the list, please rate how strongly you believe that the outcome happened because of the math skills of the tax preparer." The list included 10 possible attributes (Tax return: is Correct, is Accurate, was Done Right the First Time, is Incorrect, has Mistakes, has Errors, is Audited, the results are Trustworthy, the preparer provided Good Customer Service, and the preparer provided Friendly Service). The four attributes rated as most highly related to math skills (correct, accurate, done right, and mistakes) and the two rated least highly related (good customer service, friendly service) were retained for the study.

Participants and Design

Participants (N = 236) were recruited from Mturk and paid $0.25 for their participation. Participants were 56% male and aged between 18 and 66 (average age: 30.8). The study was a 4 (Ad Model Math Stereotype: positive, negative, neutral, no model) x 2 (Cognitive Load: low, high) between-subjects design.

Procedure

First, participants were asked to look at an advertisement for an accounting firm and write the first three things that came to mind when they looked at the ad. The advertisement varied only by the characteristics of the advertising model: the model was either an Asian man, a Caucasian woman, a Caucasian man, or the ad had no advertising model. The writing task was designed to ensure that participants looked at and thought about the advertisement. Next, participants were sorted into cognitive load condition. In the high cognitive load condition, participants were told that they would see a number at the bottom of each screen while they answered questions about the accounting firm, and they were instructed to simultaneously sum

the numbers that appeared at the bottom of the screen. In the low cognitive load conditions, participants were told that they would see a number at the bottom of each screen while they answered questions about the accounting firm, but were instructed to ignore the numbers. Participants were presented with the questions separately, with one question per screen. They were asked to rate their expectations of how accurate the service would be, the likelihood of mathematical mistakes, likelihood that it was done right, and the likelihood that it is correct. They were also asked to rate their expectations of how good and friendly the customer service would be. After rating the service, participants in the high cognitive load condition were asked to write the sum of the numbers from each screen. Finally, all participants were asked to rate how realistic and believable the ad was, their familiarity with accounting firms, and how distracted they were by the numbers. As a manipulation check, the time taken to answer each of the questions measuring their expectations of the service was recorded. See Appendix 4B for advertisements and screenshots of the questionnaire.

Covariates

Participant age and gender were collected primarily for demographic purposes. In addition, ad believability was collected to control for any potential differences in how realistic the advertisement was due to the different advertising models. Familiarity with the product category (accounting services) was measured on a 7-point rating scale (from Not Familiar at All to Very Familiar) to account for any potential individual differences in prior knowledge. Two measures of distraction were also collected to ensure that the cognitive load manipulation required sufficient attention. Participants should have felt more distracted when under high cognitive load than under low cognitive load, but should not have been affected by the advertising model. To measure distraction, participants were asked to rate how distracted they

felt by the numbers on the question screen on a 7-point scale from Not Distracted at All to Very

Distracted. The time taken to answer each question was also recorded as a more objective

measure of distraction.

Results

Since I expected some of the product attributes to be highly correlated, I first ran a

principal components analysis with promax rotation to reduce the number of dependent variables

(see Appendix 4B for rotated factor pattern). The principal components analysis revealed a 2-

factor solution with Friendly Service and Good Customer Service loading on the first

component, Correct, Accurate, and Mathematical Mistakes loading on the second component,

and Done Right loading almost equally on both factors. Because the pretest results indicate that

likelihood of the tax services being done right is associated with mathematical ability, I have

included Done Right on the second component rather than the first. The first component will be

referred to as Service Attributes and the second component will be referred to as Math-Related

Attributes.

Next, I examined the data to ensure that the manipulation of cognitive load worked as

intended. I ran a 2-way ANOVA to test whether participants' self-ratings of distraction and their

average time taken to answer each evaluation question were affected by condition. For the timing

measure, the ANOVA revealed a marginal main effect of model ($F(1,228) = 2.18$, $p = 0.091$),

and no effect of cognitive load condition or interaction of model and cognitive load condition (ps

> 0.29). For the measure of distraction, the ANOVA revealed main effects of both advertising

model and cognitive load condition, and no interaction of advertising model and cognitive load

(Ad Model: $F(1,228) = 3.38$, $p = 0.019$; Cognitive Load: $F(1,228) = 9.23$, $p = 0.0027$;

Interaction: $F(1,228) = 0.58$, $p = 0.627$). Because of the unexpected main effects of advertising

model, I next examined the means and standard deviations of distraction and timing by condition. The timing measure showed a very high mean and standard deviation in one of the conditions (see Table 1 below), so the data was examined for outliers. Data from six participants was removed for being more than two standard deviations above the mean. Examining the data again with the six participants removed revealed significant main effects of cognitive load condition for both the timing measure and the distraction measure (Timing: $F(1,222) = 19.32$, $p < 0.0001$; Distraction: $F(1,222) = 10.63$, $p = 0.0013$). There was also a significant main effect of model on the distraction measure, indicating that participants in the female model condition were more distracted than in the other conditions ($F(1,222) = 3.40$, $p = 0.018$). Tables of means and standard deviations can be found in Appendix 4B. Next, the high cognitive load condition was examined to ensure that participants had accurately performed the distraction task. Twenty-four participants were removed from the dataset for inaccurately summing the numbers on each question. Removing these participants materially affected results; removing the participants resulted in a marginal main effect of advertising model on math-related attributes that was not significant with the participants included[10].

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[10] Data analysis including the 24 participants who failed the manipulation check is included here. I ran a 2-way ANCOVA with type of attribute (Service Attributes and Math-Related Attributes) as a repeated measure, and ad believability and age of the participant as covariates. The repeated measure analysis revealed a marginal interaction of attribute type and model ($F(3,220) = 2.14$, $p = 0.095$), a significant interaction of attribute type and cognitive load ($F(1,220) = 7.68$, $p = 0.006$), and no 3-way interaction of attribute type, model, and cognitive load ($F(3,220) = 0.95$, $p = 0.42$) The analysis revealed no main effect of advertising model ($F(3,220) = 2.00$, $p = 0.11$), a significant main effect of cognitive load ($F(1,220) = 8.11$, $p = 0.005$), and no interaction of model and cognitive load ($F(3,220) = 1.29$, $p = 0.28$) on Math-Related Attributes, and no main or interaction effects on Service Attributes ($ps > 0.4$).

Table 1

| Model | Cognitive Load | Timing Average | |
		Mean	SD
Asian Male	High	6.851	3.146
Asian Male	Low	4.752	1.554
White Female	High	7.249	3.500
White Female	Low	9.044	13.522
White Male	High	6.343	2.742
White Male	Low	5.484	3.495
No Model	High	6.541	2.703
No Model	Low	6.517	4.126

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender, self-reported distraction, familiarity with accounting services, or timing to respond to questions (ps > 0.16). Thus these variables were excluded from subsequent analyses. Ad believability and participant age both had significant main effects on ratings of product attributes (Ad Believability: $F(1,192) = 68.01$, $p < 0.0001$; Participant Age: $F(1,192 = 7.28$, $p = 0.008)$. Thus these two variables were included in the subsequent analyses.

To test for evidence that stereotype transfer is more likely to occur when cognitive load is high, I ran a 2-way ANCOVA with type of attribute (Service Attributes and Math-Related Attributes) as a repeated measure, and ad believability and age of the participant as covariates[11]. The ANCOVA revealed significant within-subjects interactions of attribute type and advertising

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[11] Excluding the two covariates from the analysis did not materially affect results. Analysis excluding the covariates reported here. There were significant within-subjects interactions of attribute type and advertising model ($F(3,198) = 2.70$, $p = 0.05$) and of attribute type and cognitive load ($F(3,198) = 17.88$, $p < 0.0001$), and no 3-way interaction ($F(3,198) = 1.46$, $p = 0.22$). Examining math-related attributes, the analysis revealed a main effect of model ($F(3,198) = 2.84$, $p = 0.04$), and no effect of cognitive load condition or interaction of model and cognitive load (ps > 0.3). The contrasts indicated that when the accounting service was advertised using a female model it was rated as significantly lower on math-related attributes than when it was advertised using an Asian model ($F(1,198) = 7.83$, $p = 0.006$), no model ($F(1,198) = 3.94$, $p = 0.05$), or a Caucasian male model ($F(1,198) = 3.93$, $p = 0.05$).

model and of attribute type and cognitive load (Attribute Type x Model: $F(3,196) = 2.72$, $p = 0.045$; Attribute Type x Cognitive Load: $F(3,196) = 17.42$, $p < 0.0001$). There was no 3-way within-subjects interaction of attribute type, advertising model and cognitive load ($F(3,196) = 1.44$, $p = 0.23$). Examining math-related attributes, the ANCOVA revealed a marginal main effect of model, a significant main effect of cognitive load condition, and no interaction of model and cognitive load (Model: $M_{\text{Asian Male}} = 5.39$, $M_{\text{White Female}} = 4.79$, $M_{\text{White Male}} = 5.22$, $M_{\text{No Model}} = 5.24$, $F(3,196) = 2.34$ $p = 0.075$; Cognitive Load: $M_{\text{high load}} = 5.06$, $M_{\text{low load}} = 5.25$, $F(1,196) = 5.96$, $p = 0.016$; Interaction: $F(3,196) = 1.79$, $p = 0.15$). The contrasts indicated that when the accounting service was advertised using a female model it was rated as significantly lower on math-related attributes than when it was advertised using an Asian model or no model (Contrast female vs Asian male: $F(1,196) = 5.03$, $p = 0.026$; Contrast female vs no model: $F(1,196) = 5.23$, $p = 0.023$). Contrasts between the female and white male, and the Asian male, white male, and no model were all non-significant (ps > 0.2). For the Service Attributes, there was main effect of cognitive load condition ($M_{\text{high load}} = 5.10$, $M_{\text{low load}} = 4.53$, $F(1,194) = 6.07$, $p = 0.015$) and no effect of advertising model or interaction of model and cognitive load (ps > 0.6). Tables of means and standard deviations can be found in Appendix 4B. Figures 6A and 6B show the interactions of the model and attribute type and of cognitive load and attribute type.

Attribute Type x Ad Model

■ Asian Male ■ Caucasian Female ■ Caucasian Male ■ No Model

Math-Related Attributes: 5.39, 4.80, 5.22, 5.25

Service Attributes: 4.85, 4.63, 5.10, 4.52

Figure 6 A

Attribute Type x Cognitive Load

■ Low Cognitive Load ■ High Cognitive Load

Math-Related Attributes: 5.25, 5.06

Service Attributes: 4.53, 5.10
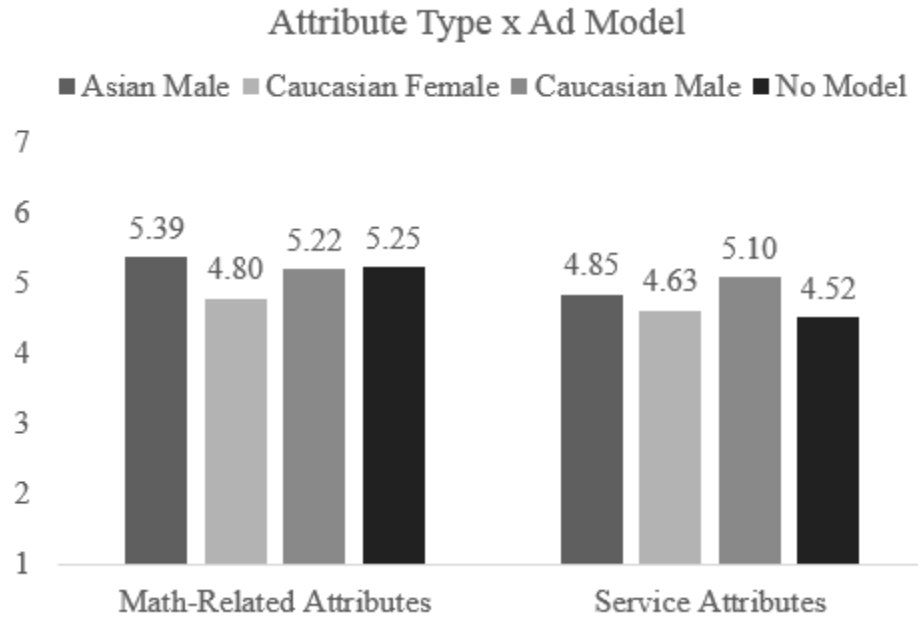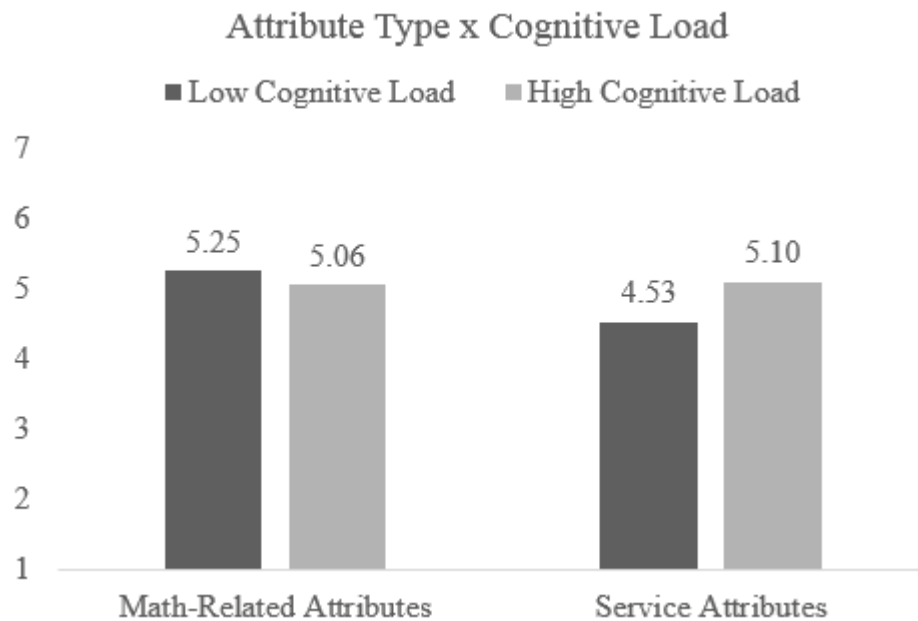
Figure 6 B

The alternative hypothesis that stereotype transfer effects are caused by perceptions of the target market were also explored in this study. The responses to the open-ended question about the perceived target market were coded for mentions of race and/or gender that matched the race

and gender of the ad model. Of the 236 participants in the study, only 4 mentioned a race or gender that matched the ad model. Three of those indicated that the advertisement with an Asian model may be targeted toward Asian customers, and the fourth indicated that the advertisement with the female model may be targeting businesswomen. Given that there was evidence of stereotype transfer from the female model to the advertised service, but no indication that participants believed the ad to be targeted toward women, it seems unlikely that the stereotype transfer effect is caused by assumptions about the target market for the advertisement. However it is possible that these responses were colored by social desirability concerns, which may have made it less likely for participants to mention race or gender.

Discussion

This study replicated the stereotype transfer effect for one math-related stereotype – that females are bad at math – but failed to replicate the stereotype transfer effect for a different math-related stereotype – that Asian men are good at math. This study also failed to replicate the results found in Study 4A, that transfer is more likely to occur under conditions of high cognitive load than under conditions of low cognitive load. A major difference between Study 4A and Study 4B was the timing of the cognitive load manipulation. In Study 4A, cognitive load was manipulated while participants saw the ad, and was not manipulated while participants evaluated the product. In this study, cognitive load was manipulated while participants answered the evaluation questions, but not while they viewed the advertisement. This design difference provides information about when stereotype transfer occurs. Taking the results of Studies 4A and 4B together, they indicate that transfer occurs at the time of viewing the advertisement, and is not affected during evaluation. This result suggests that stereotype associations are transferred to the product before evaluation occurs. Finally, this study provides evidence that indicates that the

stereotype transfer effect is likely not caused by inferences about the target market. The two final studies will examine whether stereotype transfer also occurs when the advertising model is a familiar endorser.

STUDY 5A: FAMILIAR ENDORSERS

Study 5A examines the possibility of transferring stereotype and person-specific associations from familiar advertising models to the advertised product. The goal of study 5 is to test whether advertising models who are familiar to the audience transfer associations from the stereotypes that they embody and from person-specific associations. The hypothesis that familiar advertising models will transfer person-specific associations is not novel, but rather replicates the findings from the celebrity meaning transfer literature. Celebrities have been shown to transfer their person-specific associations to the products with which they are associated (McCracken 1989, Batra & Homer 2004, Campbell & Warren 2012). The transfer occurs for both celebrities and their meanings (i.e.: Barbara Walters and the association of sophistication; Batra & Homer 2004) and for unknown models for whom familiarity is induced through increased information (i.e.: fictional star cyclist and the associations of intelligent and arrogant; Campbell & Warren 2012).

The novel question is whether stereotype associations also transfer from a familiar endorser to an advertised product along with person-specific associations. More familiar people have a larger associative network and more associations than less familiar people. With an unknown advertising model, perceivers have no information about the model so their associative network can only contain information that can be gleaned from stereotypes. With a familiar model, on the other hand, perceivers have person-specific information as well as stereotype associations, thus their associative networks are larger and more complex. The links in an

associative network vary in terms of strength and uniqueness, and the set of associations linked

to a node vary in terms of size and complexity (Meyers-Levy 1989, Bettman 1979.) The larger

and more complex the set of associations, the weaker the links between the associations

(Meyers-Levy 1989), and the stronger and more unique that a given association is, the more

likely it is to be activated (Krishnan 1996.) The associative network of a familiar person can

include person-specific associations as well as associations with any stereotype to which the

person may belong. When a familiar person's person-specific associations are stronger and more

unique than category-specific associations, the person-specific associations are more likely to be

strongly activated than the category-specific associations.

This study tests Hypothesis 4A, that products advertised by a familiar person who is a

member of a stereotyped group are less likely to gain stereotype associations than when they are

advertised by an unknown ad model who is a member of a stereotyped group, and Hypothesis

4B, that associations with a familiar advertising model will transfer to the advertised product.

Pretests

This study uses the same product and stereotype as in Study 1A, a fictional brand of

toothpaste and a stay-at-home mom stereotype. Participants (n = 36, 58% male, average age

30.2) were asked to indicate how society thinks of "stay-at-home moms" or "typical women".

They rated how strongly American society associates either "stay-at-home moms" or "typical

women" on Aaker's (1997) brand personality scale. The scale measures sincerity (domestic,

honest, genuine, cheerful), ruggedness (tough, strong, rugged, outdoorsy), excitement (daring,

spirited, imaginative, up-to-date), sophistication (glamorous, pretentious, charming, romantic),

and competence (reliable, dependable, responsible, efficient) on 5-point scales anchored by "not

at all" and "extremely". Compared to typical women, stay-at-home moms were rated more

highly on sincerity ($M_{Mom} = 3.92$, $M_{Typical} = 3.48$, $F(1,34) = 4.03$, $p = 0.053$) and competence ($M_{Mom} = 4.27$, $M_{Typical} = 3.40$, $F(1,34) = 13.49$, $p = 0.0008$), marginally lower on excitement ($M_{Mom} = 2.65$, $M_{Typical} = 3.13$, $F(1,34) = 3.20$, $p = 0.083$), lower on sophistication ($M_{Mom} = 2.50$, $M_{Typical} = 3.57$, $F(1,34) = 25.68$, $p < 0.0001$), and equally on ruggedness ($M_{Mom} = 2.44$, $M_{Typical} = 2.42$, $F(1,34) = 0.01$, $p = 0.94$). In Study 1A, stay-at-home moms were pretested as being low in competence. The biggest difference between these two pretests is the scale upon which competence was measure. In Study 1A, competence was measuring using Fiske and colleague's (1999) 6-item competence scale, including the items competent, confident, competitive, independent, and intelligent. The finding that stay-at-home moms are low on competence is consistent with the literature that uses Fiske and colleague's (1999) competence scale (Fiske et al 2002). This study, however, measured competence using Aaker's (1997) 4-item competence dimension of brand personality, including the items reliable, dependable, responsible, and efficient. Based on the scale items, it seems that the two competence scales may be measuring different dimensions of competence and Aaker's (1997) version is more compatible with the stay-at-home mom stereotype.

Based on this pretest, a fictitious spokesperson was created who conformed to the stay-at-home mom stereotype, and who, in the familiar condition, was also involved in activities meant to indicate an association with ruggedness. The stay-at-home mom stereotype should activate associations with sincerity and competence, but not with ruggedness. A fictitious spokesperson was used instead of an actual celebrity to allow for increased control over the associations that the spokesperson has in the mind of the participants. By creating a fictitious spokesperson, I was able to ensure association with the stereotype (stay-at-home mom) as well as manipulate the amount of information participants have about the spokesperson by creating an association with

ruggedness, which is a trait that is unassociated with the stay-at-home mom stereotype, for the familiar condition. Increasing the amount of information about a target person is used as a proxy for familiarity in this study because it increases the number of associations that the perceiver should have linked to the target person in memory. The additional information in the familiar condition serves to provide person-specific associations for the endorser as well as the categorical information provided by the stereotypical description.

Participants and Design

Participants were recruited from Mechanical Turk (N = 96) and offered $0.25 to complete the brief study. Participants were 50% male and aged between 18 and 69 (*M* = 33.9). The design is a 3 (Amount of Information: no stereotype, stereotypical only, stereotypical and personal) between-subjects design.

Procedure

Participants read a press release about a new advertising campaign for a fictitious brand of toothpaste (see Appendix 5A for press releases and screenshots of the questionnaire). The press release indicated that a spokesperson had been hired for the advertising campaign. Familiarity was manipulated by the amount of information provided about the spokesperson. The familiar (stereotypical and personal information) and unfamiliar (stereotypical information only) conditions differed in the number of associations that participants had with the spokesperson. In the control condition, the press release indicated only that a female spokesperson had been hired but gave no information about her and did not include a photo. In the unfamiliar condition, participants only knew that she is a stay-at-home mom and likes participating in activities that are consistent with being a stay-at-home mom. In the unfamiliar condition, participants read that, "Elizabeth is a stay-at-home mom who writes for the popular and well-known blog Blogging

Mamas, and spends her days caring for her family." In the familiar condition, participants knew that she is a stay-at-home mom who likes participating in activities that are consistent with being a stay-at-home mom, and that she also enjoys participating in activities that are unrelated to being a stay-at-home mom. In the familiar condition, participants read that, "Elizabeth is a stay-at-home mom who writes for the popular and well-known blog Blogging Mamas, and spends her days caring for her family. She's also known for her love of rock climbing and backcountry camping, and is planning to hike part of the Appalachian Trail." The activities that are unrelated to being a stay-at-home mom were chosen to give the impression that the spokesperson is outdoorsy, rugged, tough, and strong. These two press releases included an image of a woman with a small child, purported to be the spokesperson. After reading the press release, participants read, "Brands are often seen as having personalities. Try to think of Frescodent as if it were a person. To what extent do you think the following personality traits describe Frescodent?" The personality traits listed were the sincerity, ruggedness, and competence dimensions of Aaker's (1997) brand personality scale. Items on the sincerity subscale are honest, genuine, cheerful, and domestic. Items on the ruggedness subscale are rugged, tough, strong, and outdoorsy. And items on the competence subscale are reliable, responsible, dependable, and efficient. Because ruggedness is associated with masculinity (Aaker 1997), and stay-at-home moms are associated with femininity, Grohmann's (2009) masculine brand personality scale (adventurous, aggressive, brave, daring, dominant, and sturdy), and feminine brand personality scale (expresses tender feelings, fragile, graceful, sensitive, sweet, and tender) were also included.

Covariates

Participant age and gender were collected primarily for demographic purposes. In addition, brand attitude and ad believability were collected to control for any potential

differences in how realistic the advertisement was and in liking of the brand due to the different advertising models.

Results

First, the dependent variables were examined for reliability. The five brand personality scales, Ruggedness (tough, strong, outdoorsy, rugged), Sincerity (honest, genuine, cheerful, domestic), Competence (reliable, responsible, dependable, efficient), Masculine Brand Personality (adventurous, aggressive, brave, daring, dominant, sturdy), and Feminine Brand Personality (expresses tender feelings, fragile, graceful, sensitive, sweet, tender) were found to be reliable (αs > 0.69; see Appendix 5A for a table scale reliabilities).

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender and participant age (ps > 0.17). Thus these variables were excluded from subsequent analyses. Brand attitude and ad believability both had significant main effects on ratings of brand personality (Brand Attitude: $F(1,91) = 17.99$, $p <$ 0.0001; Ad Believability: $F(1,91) = 4.02$, $p = 0.048$). Thus these two variables were included in the subsequent analyses.

To test whether stereotype associations and person-specific associations transferred, ratings on the five brand personality dimensions were examined. A one-way ANCOVA was run with brand personality dimension (masculine brand personality, feminine brand personality, sincerity, competence, and ruggedness) as a repeated measure, and brand attitude and ad

believability as covariates[12]. The repeated measures analysis revealed a significant within-subjects interaction of brand personality measure and amount of information ($F(8,360) = 2.32$, $p = 0.02$). The analysis revealed a marginal effect of amount of information on ruggedness ($M_{no stereotype} = 3.90$, $M_{stereotype \& personal} = 3.93$, $M_{stereotype only} = 3.27$, $F(2,90) = 2.75$, $p = 0.069$), and no effect of any of the other dimensions ($ps > 0.3$). See Appendix 5A for means and standard deviations. An analysis of the contrasts reveal the main effect of ruggedness is driven by the stereotype-only condition, which is significantly lower on ruggedness than the stereotype and personal information condition ($M_{stereotype-only} = 3.27$, $M_{stereotype and personal} = 3.93$, $F(1,91) = 4.89$, $p = 0.03$), and marginally lower on ruggedness than the no stereotype conditions ($M_{stereotype-only} = 3.27$, $M_{no stereotype} = 3.90$, $F(1,91) = 3.58$, $p = 0.06$). Figure 7 shows the interaction of brand personality measure and amount of information.

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[12] Including the covariates does not materially affect the analysis. Analysis without the two covariates reported here. There was a significant within-subjects interaction of brand personality measure and amount of information ($F(8,372) = 2.44$, $p = 0.014$). The analysis revealed a main effect of amount of information on ruggedness ($F(2,93) = 2.97$, $p = 0.056$), and no effect of any of the other dimensions ($ps > 0.3$). An analysis of the contrasts reveal the main effect of ruggedness is driven by the stereotype-only condition, which is lower on ruggedness than both the stereotype and personal information condition ($F(1,93) = 4.63$, $p = 0.03$), and the no stereotype conditions ($F(1,93) = 4.20$, $p = 0.04$).

Brand Personality Measure x Amount of Information

■ Stereotype Only   ■ Stereotype & Personal   ■ No Sterotype
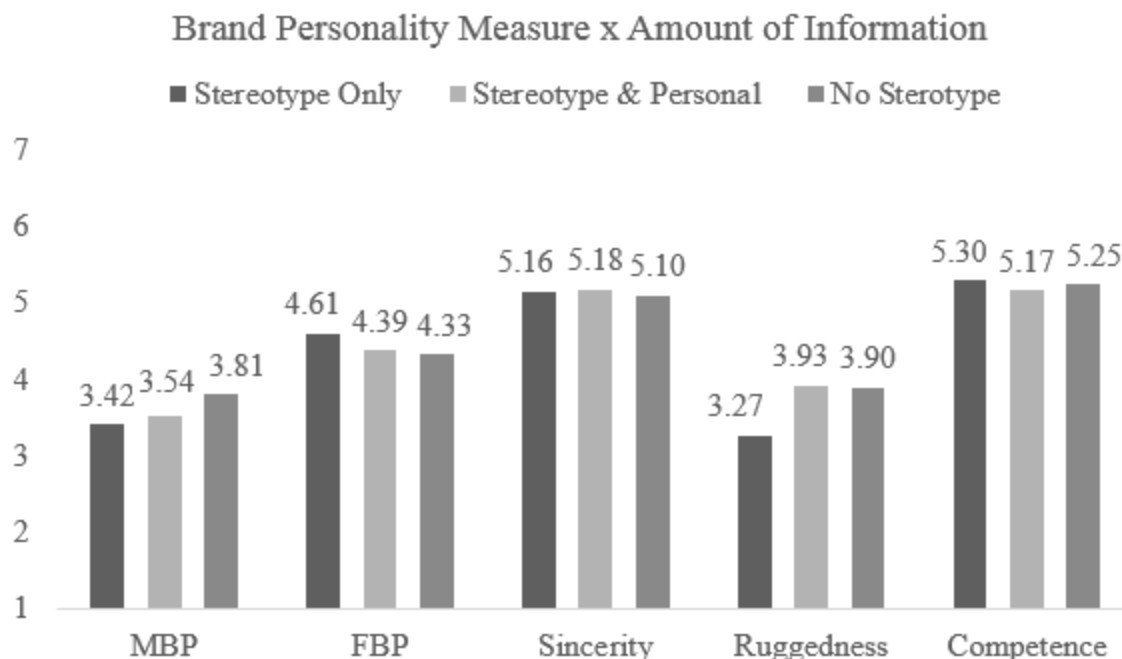
Figure 7

Discussion

This result may provide tentative support for the stereotype transfer effect and moderating role of familiarity, in that a spokesperson described as a stay-at-home mom transfers perceptions of low ruggedness to the associated product while the same spokesperson described as a stay-at-home mom who enjoys rugged activities does not. Although the pretest results indicated that the "typical woman" is no different from the stay-at-home mom on ratings of ruggedness, it is possible that "typical woman" is not a strong enough stereotype to be activated and show transfer effects. If this is the case, then the no stereotype condition would not be expected to reduce perceptions that the toothpaste brand is rugged. However, if this was the case, we should have also seen an increase in perceptions of sincerity and competence in the stereotype only condition compared to the no stereotype condition. Overall, despite the significant contrast for ruggedness, the results of Study 5A fail to support the basic stereotype transfer effect, and thus fail to provide evidence to support (or fail to support) Hypothesis 4A,

that familiarity moderates the stereotype transfer effect. Hypotheses 4A and 4B will be tested again in Study 5B, using a celebrity endorser and the overweight stereotype detailed in Study 4.

STUDY 5B: CELEBRITY ENDORSERS

This study was designed to test hypotheses 4A, that products advertised by a familiar person who is a member of a stereotyped group are less likely to gain stereotype associations than when they are advertised by an unknown ad model who is a member of a stereotyped group, and Hypothesis 4B, that associations with a familiar advertising model will transfer to the advertised product. Study 5B differs from Study 5A in the manipulation of familiarity and the stereotype examined. This study uses the overweight stereotype and product used in Study 4A, and manipulates familiarity with an endorser who is either the unknown overweight or normal weight model from Study 4A, or a famous actress who is overweight. Using a famous actress ensures that participants will have associations with the ad model that are not solely from the overweight stereotype.

Pretests

This study uses the same product, stereotype, and unfamiliar advertising models as Study 4A. Pretests were run to identify an overweight actress who is known to the population of participants who do studies on MTurk, and to identify brand personality traits that are associated with the chosen overweight actress and the overweight woman and "typical woman" stereotypes. Participants (N=31, 55% males, average age 31.4) were recruited from MTurk and asked first about their familiarity with actress Rebel Wilson. Those who indicated they were not familiar with her (n = 12, 39% of the sample), were then asked about their familiarity with actress Melissa McCarthy. Of the participants who were not familiar with Rebel Wilson, only one was

familiar with Melissa McCarthy. Participants who indicated familiarity with Rebel Wilson were asked, "Based on what you know about Rebel Wilson, how strongly would you say she is associated with each of the personality traits below?" The list of personality traits were based on Aaker's brand dimensions of Sincerity (items included domestic, honest, genuine, and cheerful), Excitement (items included daring, spirited, imaginative, and up to date), Competence (items included reliable, responsible, dependable, and efficient), Sophistication (items included glamorous, pretentious, charming, and romantic), and Ruggedness (items included tough, strong, outdoorsy, rugged). The list also included four additional traits that may be related to the famous actress (fun, playful, entertaining, and funny). Participants who indicated that they were not familiar with Rebel Wilson but were familiar with Melissa McCarthy completed the same measures for Melissa McCarthy. As there was only one person in this sample, the results were not examined. Participants who indicated they were not familiar with either Rebel Wilson or Melissa McCarthy were sent directly to the next section of the survey. The next section of the survey asked participants, "As viewed by society, how strongly are overweight women [typical women] associated with each of the personality traits below?" The list of personality traits were the same as those rated for the famous actress. Data analysis indicated that there were no differences between Rebel Wilson, overweight women, or normal weight women on the dimensions of competence and sincerity, but there were differences on excitement ($M_{\text{typical}} =$ 3.13, $M_{\text{overweight}} = 3.09$, $M_{\text{Wilson}} = 3.92$, $F(2,47) = 6.36$, $p = 0.0036$; Wilson was rated more highly on excitement than either typical or overweight women ps < 0.005), sophistication ($M_{\text{typical}} =$ 3.56, $M_{\text{overweight}} = 2.59$, $M_{\text{Wilson}} = 2.83$, $F(2,47) = 12.16$, $p < 0.0001$; typical women were rated more highly on sophistication than either overweight women or Rebel Wilson ps < 0.001), ruggedness ($M_{\text{typical}} = 2.42$, $M_{\text{overweight}} = 3.02$, $M_{\text{Wilson}} = 3.13$, $F(2,47) = 4.51$, $p = 0.02$; typical

women were rated less highly on ruggedness than either overweight women or Rebel Wilson ps < 0.026), and playfulness ($M_{typical} = 3.73$, $M_{overweight} = 3.61$, $M_{Wilson} = 4.41$, $F(2,47) = 4.89$, $p = 0.01$; Wilson was rated more highly on playfulness than either overweight women or typical women (ps < 0.022). For the study, the brand personality dimensions of excitement, sophistication, and ruggedness were retained, along with playfulness.

Participants and Design

Participants were recruited from MTurk ($N = 81$) and paid \$0.25 for their participation. Participants were 48% male and aged between 19 and 55 (average age: 30.4). The study was a 3 (Ad Model: familiar stereotypical, unknown stereotypical, unknown non-stereotypical) between-subjects design.

Procedure

Participants were first asked to choose from a list of eight movies all of the movies that they recalled having watched. Of the eight movies on the list, five were movies that featured Rebel Wilson. Participants who indicated that they had watched at least one of Rebel Wilson's movies were then directed to the study. Participants who indicated that they had not watched any of Rebel Wilson's movies were redirected to participate in a different study. This qualifying question was there to ensure that all participants would have some familiarity with Rebel Wilson. Participants in the study first read a press release about a new advertising campaign for a brand of cookies. The press release indicated that the advertising campaign would include a new spokesperson. In the celebrity condition, that spokesperson was Rebel Wilson, and the press release included some biographical information about her. Next, participants viewed a sample advertisement with either Rebel Wilson, the unknown overweight model, or the unknown normal weight model, depending on their condition. The advertisement included copy that said,

"President's Choice cookies taste just like homemade: Made with real creamery butter and all-natural ingredients – a delicious combination that's impossible to resist" (see Appendix 5B for press releases, advertisements, and screenshots of the questionnaires) Then, they rated the cookies on seven product attributes on the same 7-point scales used in Study 4A (high calorie, unhealthy, poor nutrition, tasty, rich flavor, indulgent, and convenient). Next, they rated the brand personality on four dimensions: the excitement, sophistication, and ruggedness subscales of Aaker's brand personality scales, and a fourth dimension, playfulness, that was pretested to be related to Rebel Wilson. Finally, participants indicated in an open-ended question who they believed the target market for the campaign is, rated their attitude toward the ad, ad believability, their familiarity with Rebel Wilson, and identified their age and gender.

Covariates

Participant age and gender were collected primarily for demographic purposes. In addition, brand attitude and ad believability were collected to control for any potential differences in how realistic the advertisement was and in liking of the brand due to the different advertising models. Familiarity with the celebrity ad model was also measured to account for individual differences that may exist in prior knowledge. Familiarity with the celebrity was measured in two ways: first, by asking participants to indicate from a list of movies which movies they recall having watched and counting the number of movies featuring the celebrities that the participant selected; and second, by asking participants to rate on a 7-point scale (from Not Familiar at All to Very Familiar) how familiar they are with the actress Rebel Wilson.

Results

First, the dependent variables were examined for reliability. The four brand personality scales, Excitement (daring, spirited, imaginative, and up to date), Sophistication (glamorous,

pretentious, charming, and romantic), Ruggedness (tough, strong, outdoorsy, rugged), and Playfulness (fun, playful, entertaining, and funny) were found to be reliable (αs > 0.65; see Appendix 5B for scale reliabilities). To reduce the number of variables measuring product attributes, a principal components analysis with varimax rotation was run on the product attributes. The principal components analysis revealed two components with indulgent, rich flavor, tasty, and convenient loading as one component, and high calorie, poor nutrition and unhealthy loading as the second component (See Appendix 5B for rotated factor pattern.) The first component will be referred to as Flavor-Related attributes, and the second component will be referred to as Unhealthy-Related attributes.

Next, the open-ended responses to the target market question were coded for references to overweight women. Out of 81 participants, 10 suggested in an open-ended question about the target market of the advertisement that overweight women were the target. Five of those had seen an advertisement with Rebel Wilson and six had seen an advertisement with an overweight woman. Of more concern, nine participants indicated that the target market is women on a diet and that the cookies are targeting weight loss, three who had seen an advertisement with Rebel Wilson and six who had seen an advertisement with an overweight woman. The inference that the cookies were a diet product was unexpected and may have been due to the advertising copy indicating that the cookies were "all-natural". Data from these nine participants were removed from the data because they materially affected results,[13] decreasing the significance of ratings on the brand personality dimension of playfulness.

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[13] Analysis including the 9 participants who believed the cookies were a diet product reported here. To test for transfer of associations to product attributes, a one-way ANCOVA was run with type of product attributes (Flavor-Related and Unhealthy-Related) as a repeated measure. There was no within-subjects interaction of product attribute type and model ($F(2,78) = 1.24$, $p = 0.29$). To test for transfer of associations to brand personality, a one-way ANCOVA was run with the four dimensions of brand personality as repeated measures, and attitude toward the ad and ad believability as covariates. The repeated measures analysis revealed a marginal within-subjects interaction

Next, the covariates collected were examined to determine whether they have any direct effects on the dependent variables or interactive effects with the experimental manipulations. There were no significant effects of participant gender, participant age, ratings of familiarity with Rebel Wilson, and the number of Rebel Wilson movies that participants indicated they had seen (ps > 0.5). Thus these variables were excluded from subsequent analyses. Brand attitude and ad believability both had significant main effects on ratings of brand personality (Brand Attitude: $F(1,63) = 13.10$, $p = 0.0006$; Ad Believability: $F(1,63 = 4.29$, $p = 0.04$) but not on ratings of product attributes (ps > 0.2). Thus these two variables were included in the subsequent analysis of brand personality, and excluded from the analysis of product attributes.

To test for transfer of associations to brand personality, a one-way ANCOVA was run with the four dimensions of brand personality as repeated measures, and attitude toward the ad and ad believability as covariates. The repeated measures analysis revealed a significant within-subjects interaction of brand personality dimension and model ($F(8,360) = 2.32$, $p = 0.02$). Meaning transfer would suggest that the brand personality should have been rated as higher on the playfulness and excitement dimensions when Rebel Wilson was the endorser, because Rebel Wilson is associated with being fun, playful, entertaining, and funny, and daring, spirited, imaginative, and up-to-date. Stereotype transfer would have predicted that the brand personality should have been rated as higher on ruggedness and lower on sophistication when either Rebel Wilson or the overweight model was the endorser than the normal weight model. However, only the playfulness dimension was significantly different between conditions (excitement, sophistication, and ruggedness ps > 0.25). The brand personality was rated more highly on playfulness when Rebel Wilson was the endorser than when the endorser was either the unknown

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of brand personality dimension and model ($F(6,228) = 1.79$, $p = 0.10$). Only the Playfulness dimension had a marginal effect of model ($F(2,76) = 2.42$, $p = 0.096$), model had no effect on the other three dimensions (ps > 0.18).

overweight woman or the unknown normal weight woman ($M_{\text{Rebel Wilson}}$ = 4.15, $M_{\text{overweight}}$ = 4.20, $M_{\text{Normal Weight}}$ = 3.57, $F(2,67)$ = 3.22, p = 0.046; Contrast Wilson vs Overweight: $F(1,65)$ = 0.01, p = 0.91; Contrast Wilson vs Normal Weight: $F(1,65)$ = 4.01, p = 0.049; Contrast Overweight vs Normal Weight: $F(1,65)$ = 4.14, p = 0.46). These results are not consistent with the pretest, which indicated that the Rebel Wilson should also be rated more highly on playfulness than the overweight model, and that the overweight and normal weight models should not differ on playfulness. When this model was tested without the covariates, there were no significant results.[14] Figure 8A shows the interaction of brand personality dimension and model.
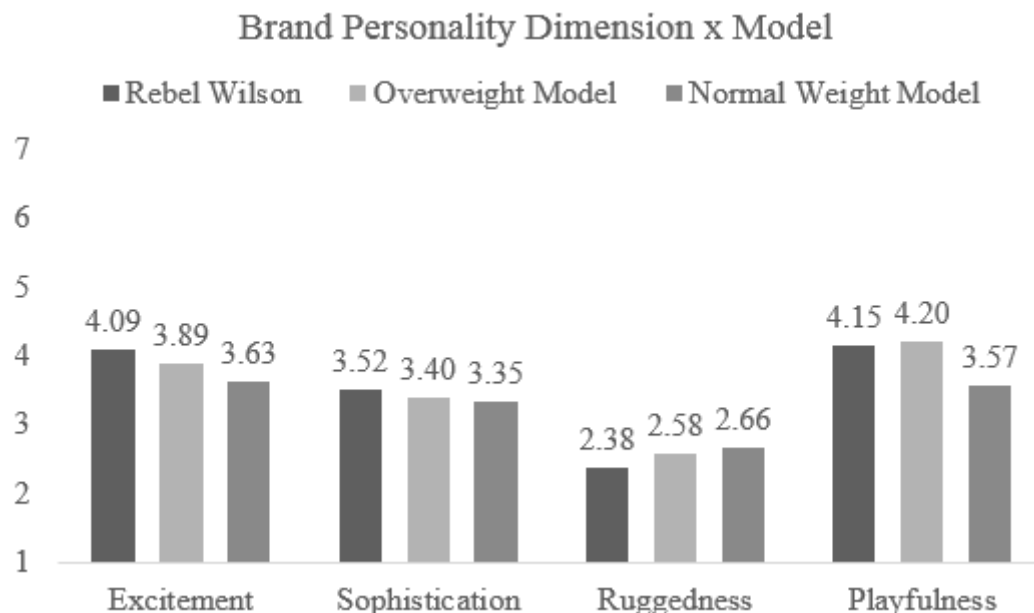
Figure 8 A

Next, to test for stereotype transfer to product attributes, a one-way ANCOVA was run with type of product attributes (Flavor-Related: indulgent, rich flavor, tasty, and convenient; and

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[14] Excluding the covariates from the analysis materially affect the results. Results of the ANCOVA without the covariates reported here. There was no significant within-subjects interaction of brand personality dimension and ad model ($F(6,207)$ = 0.095, p = 0.12). The ad model had no effect on any of the brand personality dimensions (ps > 0.19).

Unhealthy-Related: high calorie, poor nutrition and unhealthy) as a repeated measure. The repeated measures analysis revealed no significant within-subjects interaction of attribute type and model ($F(2,69) = 2.17$, $p = 0.12$). Flavor-related attributes, which are not associated with the overweight stereotype, were not affected by the model ($M_{\text{Rebel Wilson}} = 5.73$, $M_{\text{overweight}} = 5.55$, $M_{\text{Normal Weight}} = 5.53$, $F(2,65) = 1.36$, $p = 0.26$). Unhealthy-related attributes were significantly different between conditions ($M_{\text{Rebel Wilson}} = 5.50$, $M_{\text{overweight}} = 4.56$, $M_{\text{Normal Weight}} = 5.10$, $F(2,65) = 3.90$, $p = 0.02$). Although the stereotype transfer hypothesis and the results of Study 4 indicate that the overweight unknown ad model should increase the perception that the cookies are high calorie, poor nutrition, and unhealthy compared to the normal weight model, this was not replicated in this study. The overweight unknown model reduced the perception that the cookies were high calorie, had poor nutrition, and were unhealthy compared to the overweight celebrity, and directionally but not significantly compared to the normal weight model (Contrasts Wilson vs Overweight: $F(1,69) = 8.24$, $p = 0.005$; Overweight vs Normal weight: $F(1,69) = 2.72$, $p = 0.104$). The normal weight model and overweight celebrity were not significantly different ($F(1,69) = 1.72$, $p = 0.19$). See Appendix 5B for means and standard deviations. Figure 8B shows the interaction of attribute type and ad model.

Attribute Type x Model

■ Rebel Wilson ■ Overweight Model ■ Normal Weight Model
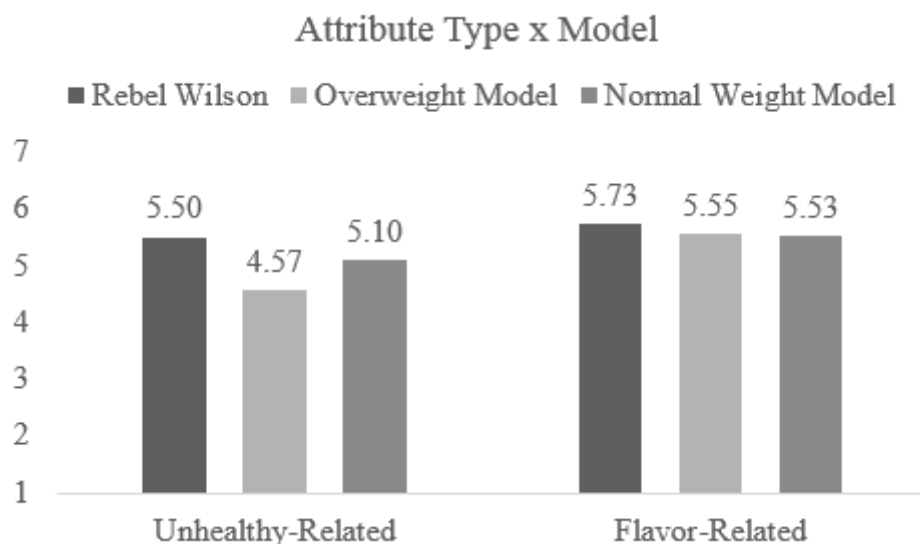
Figure 8 B

Discussion

This study should have replicated the results of Study 4A, that the cookies advertised by an overweight model are rated more highly on unhealthy attributes than the cookies advertised by a normal weight model. This finding, however, was not replicated. In this study, there was no significant difference on ratings of unhealthy attributes between the cookies advertised with an overweight model and those advertised with a normal weight model. Because this study did not replicate the basic stereotype transfer effect, this study also provided no evidence to support (or fail to support) hypotheses 4A and 4B, that products advertised by a familiar person who is a member of a stereotyped group are less likely to gain stereotype associations than when they are advertised by an unknown ad model who is a member of a stereotyped group, and that associations with a familiar advertising model will transfer to the advertised product. It is possible that this study, despite using similar materials as study 4A, failed to replicate the results because this study did not include a cognitive load manipulation. If participants noticed the link between the overweight model and the cookies, they may have overcorrected for perceived bias.

CHAPTER 4

CONCLUSIONS

The increasing use of non-standard ad models in marketing communications creates a need to understand the potential risks and benefits of these non-standard models to the associated products and brands (Zmuda 2014). This research examines when using non-standard models in mainstream marketing can backfire or help with a mainstream audience. Mainstream models are Caucasian, fit or thin, men and women. For masculine products (ie: tools, cars, beer), mainstream models are men or women as sex objects. For feminine products (ie: cleaning, beauty products), mainstream models are women. Anyone outside of this narrow group, for example an older model, or an overweight model, can be considered a non-standard model. Non-standard models also tend to fit into stereotyped groups. My research suggests that by including models who are members of a stereotyped group in an advertisement, there may be unintended consequences in how the brand or product is perceived. In this dissertation, I find some evidence to support the idea that stereotype associations activated by the use of stereotypical models can transfer to advertised products, influencing the perceptions of brand personality and product attributes, and that this transfer may be more likely to occur when people are not paying full attention to the advertisement.

Theoretical Contributions

Together, three of the seven studies demonstrate a stereotype transfer effect from advertising model to brand personality and product attributes. The stereotype transfer effect is shown across multiple stereotypes: two occupational stereotypes (businessperson and stay-at-home parent), math-related female stereotypes, and stereotypes of overweight women. The

studies suggest that it is more likely to occur under conditions of high cognitive load, when less attention is paid to the advertisement, and explore two alternative explanations for the effect.

Studies 1A and 1B examine stereotype transfer to brand personality, testing whether an ad model who is a member of a stereotyped group transfers stereotype associations to brand personality (Hypothesis 1A), using occupational stereotypes that vary along competence and warmth dimensions. The results of this study provide initial support that the traits associated with the specific stereotype of an advertising model transfer to the perceived brand personality of the advertised product. Using a model with an occupational stereotype that is high in warmth increased perceptions that the brand was warm and feminine, and using a model with an occupational stereotype that is high in competence increased perceptions that the brand was competent and masculine. Although high warmth is typically considered a feminine trait and high competence is typically considered a masculine trait, these results held regardless of the gender of the ad model. Male models who embodied a more feminine high warmth stereotype (stay-at-home dads) increased perceptions that the brand personality was feminine, and female models who embodied a more masculine high competence stereotype (businesswomen) increased perceptions that the brand personality was masculine and competent. This provides support for the idea that it is the stereotype of the model that matters rather than the gender of the model. Studies 1A and 1B were the only studies that successfully showed transfer of stereotype associations from advertising model to brand personality. Although transfer to brand personality was also tested in studies 2, 5A and 5B, these studies failed to show any transfer effects.

Study 2 attempts to examine whether ad model stereotype associations can also transfer to perceived product attributes (Hypothesis 1B). Further, it attempts to explore perceived target market as an alternative explanation (Hypothesis 5B), using gender stereotypes. Although this

study did not support the hypothesis that stereotype associations could transfer to perceived product attributes, it also failed to replicate the finding from Study 1 that the stereotype could transfer to brand personality. The failure to replicate the findings from Study 1 and the failure to support the hypothesis of transfer to product attributes could be due to the lack of specificity and strength of the gender stereotypes used in this study. Research into gender stereotypes indicates that "male" and "female" are broad stereotypical categories that are commonly categorized into distinct subtypes (Edwards 1992, Noseworthy & Lott 1984). These sub-stereotypes represent distinct stereotypes nested within the more abstract stereotype that can have very different associations (Edwards 1992, Noseworthy & Lott 1984). Study 2 used the broader male and female gender stereotypes rather than a more specific sub-stereotype. It is possible that in order for transfer to occur, the stereotype must be specific and strongly held. Since Study 2 failed to find evidence that stereotype associations transfer to product attributes, Hypothesis 1B was tested again in Study 3 with racial stereotypes.

While Study 1 used a product (toothpaste) that is unassociated with the ad model stereotypes, Study 3 examined the role of stereotype-product match, whether associations are more likely to transfer when the stereotype associations are related to the product associations (Hypothesis 2). Study 3 failed to provide support for the stereotype transfer effect, and also failed to provide support for the importance of stereotype-product relevance. In hindsight, evidence from Study 4 that stereotype transfer can be inhibited given sufficient cognitive resources may explain the lack of transfer effects in this study. Asians, for instance, are strongly associated with technology products (Paek & Shah 2003), and that strong association may have made the relationship between the stereotype associations and the product attributes too obvious, leading participants to correct against any potential bias in their evaluations. Unfortunately, no

data was collected in this study that could support or refute this suggestion, so the failure of the African-American and Asian models to affect perception of product attributes is a matter of speculation. Hypothesis 2 was not tested in any further studies, thus it is not possible to support (or fail to support) the importance of stereotype-product relevance with the current data.

As the evidence thus far has failed to support Hypothesis 1B, that stereotype associations can transfer from advertising models to product attributes, Study 4A serves as a test of this hypothesis. Study 4A also examines the role of attentional resources (Hypothesis 3) and attempts to rule out semantic priming as an alternative explanation (Hypothesis 5A), using the stereotype associated with overweight women. The results of Study 4A provide the first evidence that stereotype associations can transfer to product attributes, and provides evidence against the alternative explanation that the stereotype transfer effect is simply an artifact of priming. Since priming effects have a relatively brief duration, persistence of an effect across a delay provides evidence that the effect is not simply due to priming (Bargh, Lombardi & Higgins 1988). In this study, the overweight stereotype associations transferred to a related product (cookies), and this effect persisted even after a five to ten minute delay. Further, the results provide evidence that stereotype transfer is an automatic process, that it can occur when the availability of cognitive resources are low. This result is in line with evidence from the literature on stereotype application that perceivers who recognize that a stereotype may be causing bias in his or her evaluations can inhibit or control the application of the stereotype (Sherman, Macrae & Bodenhausen 2000, Blair 2002). The participants in the low cognitive load condition were able to prevent their stereotype associations from biasing their evaluations of the cookies, presumably because they recognized the links between the overweight model and the product (cookies). The participants in the high cognitive load condition, who were rehearsing a difficult to recall number

while evaluating the cookies, did not have enough cognitive resources to prevent their stereotype associations from transferring to their evaluations of the cookies. Because this result is contrary to Hypothesis 3, the role of cognitive load is tested again in Study 4B.

Study 4B tests the role of cognitive load with one major difference from the cognitive load manipulation in Study 4A. In Study 4A, the cognitive load manipulation was placed on viewing the advertisement and released before the product was evaluated. In Study 4B, the cognitive load manipulation was placed on the product evaluation. This difference turned out to be important – Study 4B failed to replicate the results of Study 4A, that the transfer was more likely to occur under high cognitive load than under low cognitive load. This study did provide partial support for Hypothesis 1B, that stereotype associations can transfer from advertising model to product attributes. When the ad model was female, the accounting service was rated as worse on math-related product attributes than when the ad model was Asian or when there was no ad model. Conversely, the Asian model had no effect on ratings of math-related product attributes. It is possible that the relationship between Asian stereotype associations and accounting services was more obvious to participants than the relationship between female stereotype associations and accounting services. Although I do not have data to support or refute this suggestion, this would explain the partial effect and could be tested in a future study. Considering that in Study 4A, only participants who had fewer cognitive resources available while viewing the advertisement showed effects of stereotype transfer, but in Study 4B, availability of cognitive resources while evaluating the product had no effect on stereotype transfer, the results suggest that transfer occurs at the time of viewing the advertisement, before any prompting to evaluate the product. This study also provided evidence against the alternative hypothesis that the stereotype transfer effect is caused by the perception that the ad model is

representative of the target market. Since the majority of participants who viewed the advertisement with a female model, and showed evidence of stereotype transfer, did not indicate that they felt the advertisement was targeted toward women, it seems unlikely that these effects are driven by changing perceptions of the target market.

The last two studies were intended to examine whether stereotype transfer also occurs when the advertising model is a familiar endorser. However, both Study 5A and 5B failed to replicate the basic effect that stereotype associations transfer to the advertised product's brand personality and product attributes. Since the basic effect was not replicated, whether familiarity moderates stereotype transfer could not be tested.

Theoretically, this research contributes to the stereotyping literature, showing that stereotype associations can transfer to associated objects. It also contributes to the literature examining advertising's effects on product perceptions and brand personality, showing that stereotype associations can transfer to perception of product attributes and brand personality. Hypotheses 1A and 1B were supported in three studies, showing transfer of stereotype associations to brand personality and product attributes. Two studies failed to support Hypothesis 3, and one of those studies instead found evidence to support the opposite prediction: that stereotype transfer may instead be automatic, and that people may be able to inhibit the transfer of stereotype associations to perception of product attributes. An alternative hypothesis (Hypothesis 5A), that these effects are due to priming, was not supported: evidence indicated that stereotype transfer effects persist across time, which is typically considered evidence that rules out priming as a mechanism. Additionally, no evidence was found to support the alternative hypothesis that stereotype transfer effects are driven by inferences about who the target market is and what are the product attributes that would appeal to the perceived target market (Hypothesis

5B). Two further hypotheses, that stereotype associations are more likely to transfer when there is a match between the associations and the consumers' schema for the advertised products (Hypothesis 2), and that familiarity with the advertising model may moderate the effects of stereotype transfer could not be supported or refuted with the available data.

Managerial Implications

Substantively, this research provides some insight for marketers into the potential benefits and drawbacks of using non-standard models in advertising campaigns. Since stereotype associations can affect the perception of advertised products and brand personality, the possible links between the stereotype associations and the product attributes should be considered when choosing models for advertising campaigns. In choosing a nonstandard model, marketers should consider whether there are overlapping associations between the model's stereotype and the advertised product, and if so, whether these associations may help or hurt the brand.

Given the finding that a lack of available cognitive resources while viewing an advertisement increases the likelihood of stereotype transfer, this is a topic that should be of concern to marketing managers. In many cases, the target audience for an advertisement will not devote a lot of cognitive resources to processing an advertisement. A recent analysis of Nielsen data found that over 80% of Americans regularly (almost always or always) multitask while watching television (MarketingCharts 2013). This level of multitasking suggests that most consumers will be somewhat distracted from the commercials on television. The evidence from Study 4A suggests that audiences who are dividing their attention between an advertisement and a different task are more likely to show effects of stereotype transfer, making stereotype transfer a greater concern for marketers.

Limitations and Future Research

There are significant limitations to the hypothesis of stereotype transfer from advertising models to the perceived brand personality and product attributes of the advertised product. Specifically, four out of seven studies failed to find any evidence supporting a stereotype transfer effect. It is possible that these four studies failed because participants were able to inhibit stereotype transfer, and that adding a distractor task to these studies would have yielded support for the stereotype transfer effect. Alternatively, these studies may have failed simply because the stereotype transfer effect is weak or otherwise unreliable. This should be tested in future research.

Additionally, the two hypotheses for which studies failed to find support for or against should be examined further. Whether stereotype transfer is more likely to occur when the ad model's stereotype associations are relevant to the product's schema is still an open question, as is whether stereotype transfer occurs with familiar and celebrity endorsers. It remains unclear whether celebrity endorsers, who have their own specific meaning and associations, also transfer stereotype associations to the products and brands that they endorse. It also remains unclear to what extent a spokesperson needs to be familiar to the audience before familiarity can moderate stereotype transfer. Many companies choose to use a non-famous spokesperson – for example, the spokesperson for Dos Equis, The Most Interesting Man in the World, who is a character created by the company to be a spokesperson in their advertisements. The stereotype transfer effect would benefit from a deeper examination of the role of familiarity and stereotype-product relevance.

Further, because my research thus far has only examined unknown brands, it is unclear whether stereotype transfer is a concern for established brands. Established brands often have

strong brand personalities and strong product schemas that may not be easily changed. In order to better understand the practical significance of stereotype transfer in advertising, future research should examine stereotype transfer with established brands and products. It is possible that for established brands and products, stereotype transfer would require multiple exposures to the same stereotype-product pairing.

Finally, a related extension of this research should look at the case of multiple stereotypes. Advertisers using unknown models often vary the model in the advertisement, varying the actual person as well as the relevant stereotypes. It is unclear how stereotype transfer would affect, for example, an advertisement that uses multiple models embodying multiple stereotypes, or an advertising campaign that uses several different models, each embodying a different stereotype separately in different advertisements. Future research should examine the conditions that determine which of multiple stereotypes in the same advertisement might be more likely to transfer to the product, as well as how long-term advertising campaigns that vary the stereotype of the advertising models affect the long-term perceptions of the brand and product.

Conclusion

My research examines an interesting implication of the use of non-standard models in advertisements. It suggests that ad models that fit a stereotype may transfer those stereotype associations to the products and brands in the advertisements. It also begins to examine the circumstances that make this transfer more or less likely to occur. A deeper understanding of how stereotype associations transfer to associated objects provides a novel contribution to our knowledge of consumer behavior.

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APPENDIX 1A: STUDY 1A

Stimuli

In the hectic life of a stay-at-home-mom, good hygiene is important. I rely on Frescodent's advanced whitening formula for a bright smile and fresh breath that lasts all day long.

In the hectic life of a businesswoman, good hygiene is important. I rely on Frescodent's advanced whitening formula for a bright smile and fresh breath that lasts all day long.

Questionnaire Screenshots

What is your attitude towards Frescodent Toothpaste?

Bad	○	○	○	○	○	○	○	Good
Negative	○	○	○	○	○	○	○	Positive
Unfavorable	○	○	○	○	○	○	○	Favorable

Based on this advertisement, how likely would you be to purchase Frescodent Toothpaste?

Unlikely	○	○	○	○	○	○	○	Likely

Brands are often seen as having personalities. Try to think of Frescodent as if it were a person. To what extent do you think the following personality traits describe Frescodent?

	Never True						Always True
Tender	○	○	○	○	○	○	○
Sturdy	○	○	○	○	○	○	○
Sweet	○	○	○	○	○	○	○
Dominant	○	○	○	○	○	○	○
Sensitive	○	○	○	○	○	○	○
Daring	○	○	○	○	○	○	○
	Never True						Always True
Graceful	○	○	○	○	○	○	○
Brave	○	○	○	○	○	○	○
Fragile	○	○	○	○	○	○	○
Aggressive	○	○	○	○	○	○	○
Expresses Tender Feelings	○	○	○	○	○	○	○
Adventurous	○	○	○	○	○	○	○
	Never True						Always True
Tolerant	○	○	○	○	○	○	○
Intelligent	○	○	○	○	○	○	○
Good-Natured	○	○	○	○	○	○	○
Independent	○	○	○	○	○	○	○
Warm	○	○	○	○	○	○	○
Competitive	○	○	○	○	○	○	○
	Never True						Always True
Sincere	○	○	○	○	○	○	○
Confident	○	○	○	○	○	○	○
Likeable	○	○	○	○	○	○	○
Competent	○	○	○	○	○	○	○

>>

Please think back to the advertisement you just saw.

How realistic did you find this advertisement?

Not Realistic At All   Very Realistic

○ ○ ○ ○ ○ ○ ○

How believable to did you find this advertisement?

Not Believable At All   Very Believable

○ ○ ○ ○ ○ ○ ○

What was the occupation of the person in the advertisement?

>>

Means & Standard Deviations

	Businesswoman		Stay-at-Home Mom	
	Mean	SD	Mean	SD
Competence	4.76	1.192	4.27	1.086
Warmth	4.27	1.313	5.00	1.020
Feminine Brand Personality	3.14	1.101	4.18	1.137
Masculine Brand Personality	3.88	1.040	3.06	1.317
Ad Believability	4.35	1.780	4.14	1.713
Brand Attitude	4.49	1.293	4.73	0.980

Scale Reliabilities

	Internal Consistency (Cronbach's Alpha)
Competence	0.81
Warmth	0.88
Feminine Brand Personality	0.88
Masculine Brand Personality	0.88

APPENDIX 1B: STUDY 1B

Stimuli

Means & Standard Deviations

| | Businessman | | Stay-at-Home Dad | |
	Mean	SD	Mean	SD
Competence	4.83	1.433	4.42	1.248
Warmth	4.34	1.574	4.85	1.399
Feminine Brand Personality	3.46	1.486	4.45	1.260
Masculine Brand Personality	4.30	1.395	3.66	1.285
Ad Believability	4.22	1.847	3.81	1.653
Brand Attitude	4.89	1.482	4.76	1.238

Scale Reliabilities

	Internal Consistency (Cronbach's Alpha)
Competence	0.87
Warmth	0.94
Feminine Brand Personality	0.92
Masculine Brand Personality	0.88

APPENDIX 2: STUDY 2

Stimuli

Questionnaire Screenshots

Based on the advertisement you just saw for Bom Dia Cafe coffee, please rate your expectations of the coffee on following attributes:

Not Strong at all	○	○	○	○	○	○	○	Very Strong
Not Very Highly Caffeinated	○	○	○	○	○	○	○	Very Highly Caffeinated
Not Bitter At All	○	○	○	○	○	○	○	Very Bitter
Not Aromatic At All	○	○	○	○	○	○	○	Very Aromatic
Not Smooth at all	○	○	○	○	○	○	○	Very Smooth
Not Weak at all	○	○	○	○	○	○	○	Very Weak
Not Decaffeinated	○	○	○	○	○	○	○	Decaffeinated
Unlikely to be Available in Flavored Versions	○	○	○	○	○	○	○	Likely to be Available in Flavored Versions

>>

What is your attitude towards the Bom Dia brand?

Bad	○	○	○	○	○	○	○	Good
Negative	○	○	○	○	○	○	○	Positive
Unfavorable	○	○	○	○	○	○	○	Favorable

Brands are often seen as having personalities. Try to think of Bom Dia as if it were a person. To what extent do you think the following personality traits describe Bom Dia?

	Never True						Always True
Tender	○	○	○	○	○	○	○
Sturdy	○	○	○	○	○	○	○
Sweet	○	○	○	○	○	○	○
Dominant	○	○	○	○	○	○	○
	Never True						Always True
Sensitive	○	○	○	○	○	○	○
Daring	○	○	○	○	○	○	○
Graceful	○	○	○	○	○	○	○
Brave	○	○	○	○	○	○	○
	Never True						Always True
Fragile	○	○	○	○	○	○	○
Aggressive	○	○	○	○	○	○	○
Expresses Tender Feelings	○	○	○	○	○	○	○
Adventurous	○	○	○	○	○	○	○

>>

Please rate on the scale below who you believe is the primary target market for Bom Dia Cafe coffee. By primary target market, we mean what type of customer is Cafe Bom Dia trying to attract.

Only Women   Both Women & Men Equally   Only Men

○   ○   ○   ○   ○   ○   ○

>>

How often do you drink coffee?

Never   Occasionally   Every Day

○   ○   ○

How familiar are you with coffee?

Not Familiar at all   Very Familiar

○   ○   ○   ○   ○   ○   ○

How often do you drink coffee at a coffee shop?

Never   Occasionally   Every Day

○   ○   ○

How familiar are you with coffee from coffee shops?

Not Familiar at all   Very Familiar

○   ○   ○   ○   ○   ○   ○

>>

Please think back to the advertisement you just saw.

How realistic did you find this advertisement?

Not Realistic At All   Very Realistic

○   ○   ○   ○   ○   ○   ○

How believable to did you find this advertisement?

Not Believable At All   Very Believable

○   ○   ○   ○   ○   ○   ○

>>

Principal Components Analysis

Rotated Factor Pattern		
	Factor1	Factor2
Smooth	0.708	0.148
Aromatic	0.652	0.350
Bitter	-0.327	0.035
Caffeinated	-0.026	0.542
Weak (reversed)	0.447	0.504
Decaffeinated (reversed)	0.055	0.469
Strong	0.238	0.424

Means & Standard Deviations

	Female Model		Male Model	
	Mean	SD	Mean	SD
Target Market	3.83	0.693	4.10	0.730
Masculine Brand Personality	4.20	1.042	4.31	1.103
Feminine Brand Personality	4.19	0.980	3.85	0.857
Strength-Related Attributes	5.18	0.800	5.18	0.871
Taste-Related Attributes	4.83	0.820	4.89	0.633

APPENDIX 3: STUDY 3

Stimuli

Questionnaire Screenshots

Based on the advertisement you just saw for XOLO's new smartphone cases, please rate your expectations of the smartphone case.

	Not at all						Very
Tough	○	○	○	○	○	○	○
Smart	○	○	○	○	○	○	○
High Tech	○	○	○	○	○	○	○
Stylish	○	○	○	○	○	○	○
Sophisticated	○	○	○	○	○	○	○
Rugged	○	○	○	○	○	○	○
Fashionable	○	○	○	○	○	○	○
Strong	○	○	○	○	○	○	○

>>

Please rate on the scales below who you believe is the primary target market for the XOLO smartphone case. By primary target market, we mean what type of customer is XOLO trying to attract.

Only Women			Both Women & Men Equally			Only Men
○	○	○	○	○	○	○

○ Primarily Caucasians

○ Primarily African Americans

○ Primarily Asians

○ All Races Equally

>>

Please think back to the advertisement you just saw.

What was the product being advertised?

[   ]

What ethnicity was the person in the advertisement?
○ Caucasian
○ African American
○ East Asian (e.g.: Chinese, Japanese)
○ South Asian (e.g.: Indian, Pakistani)
○ Hispanic
○ Other
[   ]
○ There was no person in the advertisement

How realistic did you find this advertisement?

Not Realistic At All   Very Realistic
○   ○   ○   ○   ○   ○   ○

How believable to did you find this advertisement?

Not Believable At
All   Very Believable
○   ○   ○   ○   ○   ○   ○

[>>]

Do you currently or have you in the past used a smartphone?

No   Yes

○   ○

How familiar are you with smartphones?

Not Familiar at all   Very Familiar

○   ○   ○   ○   ○   ○   ○

Do you currently or have you in the past used a protective case for a smartphone?

No   Yes

○   ○

How familiar are you with protective cases for smartphones?

Not Familiar at all   Very Familiar

○   ○   ○   ○   ○   ○   ○

[>>]

Principal Components Analysis

Rotated Factor Pattern		
	Factor1	Factor2
Stylish	0.847	0.178
Sophisticated	0.844	0.179
High Tech	0.789	0.169
Fashionable	0.787	0.263
Smart	0.760	0.244
Tough	0.186	0.868
Strong	0.342	0.823
Rugged	0.146	0.822

Means & Standard Deviations

		African-American Attributes		Asian Attributes	
		Mean	SD	Mean	SD
Asian Model	Smartphone	3.24	1.333	4.47	1.373
	Case	4.09	1.745	3.95	1.190
African-American Model	Smartphone	3.24	1.339	4.41	1.652
	Case	4.68	1.317	4.56	1.320

APPENDIX 4A: STUDY 4A

Stimuli

NEW CHOCOLATE CHIP PECAN COOKIES FROM PRESIDENT'S CHOICE

CHOCOLATE CHIP PECAN

TASTES LIKE HOMEMADE!

NEW CHOCOLATE CHIP PECAN COOKIES FROM PRESIDENT'S CHOICE

CHOCOLATE CHIP PECAN

TASTES LIKE HOMEMADE!

NEW CHOCOLATE CHIP PECAN COOKIES FROM PRESIDENT'S CHOICE

CHOCOLATE CHIP PECAN

TASTES LIKE HOMEMADE!

Questionnaire Screenshots

Memorization Task

The study you are about to complete involves a memory task. On the next page, you will be shown a list of numbers for 15 seconds. After the 15 seconds are up, your task will be to rehearse the numbers in your mind while engaging in another task. Both tasks are important and you should do your best on both of them.

The numbers may be difficult to remember or easy to remember – just memorize them without writing it down. Please, no cheating!

>>

Please memorize this number: 88888888

Please memorize this number: 87173682

Advertising Study

On the following page you will see an advertisement for a new product. Please look at the advertisement, then rate your attitude toward the advertisement on the scale below.

Don't forget the number you just memorized!

>>

NEW CHOCOLATE CHIP PECAN COOKIES FROM PRESIDENT'S CHOICE

TASTES LIKE HOMEMADE!

Please rate your attitude toward this advertisement:

Negative	○ ○ ○ ○ ○ ○ ○ ○ ○	Positive
Unfavorable	○ ○ ○ ○ ○ ○ ○ ○ ○	Favorable
Uninteresting	○ ○ ○ ○ ○ ○ ○ ○ ○	Interesting
Dislike	○ ○ ○ ○ ○ ○ ○ ○ ○	Like
Uninformative	○ ○ ○ ○ ○ ○ ○ ○ ○	Informative
Not Believable	○ ○ ○ ○ ○ ○ ○ ○ ○	Believable

\>\>

Please write out the number that you memorized earlier:

\>\>

Product rating

Please think back to the cookies you saw advertised earlier. Take a moment and imagine trying the cookies.

Please indicate your expectations of the cookies on the attributes below:

Not Tasty	○	○	○	○	○	○	○	Very Tasty
Very Low Calorie	○	○	○	○	○	○	○	Very High Calorie
Very Poor Nutrition	○	○	○	○	○	○	○	Very Good Nutrition
Very Inconvenient	○	○	○	○	○	○	○	Very Convenient
Very Unhealthy	○	○	○	○	○	○	○	Very Healthy
Not Indulgent	○	○	○	○	○	○	○	Very Indulgent
Not a Rich Flavor	○	○	○	○	○	○	○	Very Rich Flavor
Not Crunchy	○	○	○	○	○	○	○	Very Crunchy
Not Chewy	○	○	○	○	○	○	○	Very Chewy

[>>]

Attitudes Study

On the next page, you'll be asked to rate how well a group of people fits various adjectives that are sometimes used to describe them. Please read and follow the instructions. There are no right or wrong answers.

[>>]

Listed below are 14 pairs of adjectives sometimes used to describe obese or fat people. For each adjective pair, please select the option closest to the adjective that you feel best describes your feelings and beliefs.

Lazy	○	○	○	○	○	Industrious
Not will power	○	○	○	○	○	Has will power
Attractive	○	○	○	○	○	Unattractive
Good self-control	○	○	○	○	○	Poor self-control
Fast	○	○	○	○	○	Slow
Having endurance	○	○	○	○	○	Having no endurance
Active	○	○	○	○	○	Inactive
Weak	○	○	○	○	○	Strong
Self-indulgent	○	○	○	○	○	Self-sacrificing
Dislikes food	○	○	○	○	○	Likes food
Shapeless	○	○	○	○	○	Shapely
Undereats	○	○	○	○	○	Overeats
Insecure	○	○	○	○	○	Secure
Low self-esteem	○	○	○	○	○	High self-esteem

[>>]

What is your gender?

○ Male

○ Female

How old are you?

[   ]

How tall are you (in feet and inches)?

[   ]

What is your weight (in pounds)?

[   ]

What is your ideal weight (in pounds)?

[   ]

[>>]

Principal Components Analysis

Rotated Factor Pattern			
	Factor1	Factor2	Factor3
Flavor	0.764	0.048	-0.066
Indulgent	0.728	0.137	-0.016
Tasty	0.687	-0.001	-0.090
Convenient	0.223	-0.014	0.010
Healthy (Reversed)	-0.034	0.713	-0.051
Nutrition (Reversed)	-0.060	0.643	-0.064
Calorie	0.226	0.485	-0.037
Chewy (Reversed)	-0.221	-0.041	0.722
Crunchy	0.102	-0.097	0.713

Means & Standard Deviations

		Unhealthy Attributes		Taste Related Attributes		Texture Attributes	
		Mean	SD	Mean	SD	Mean	SD
Low Cognitive Load	Normal Weight	4.96	1.124	4.66	1.179	4.06	1.602
	Overweight	5.01	1.057	4.41	1.345	4.27	1.520
	No Model	5.00	1.033	5.20	0.961	4.13	1.211
High Cognitive Load	Normal Weight	4.87	0.912	4.46	1.187	4.43	1.408
	Overweight	5.44	1.203	4.52	1.411	4.02	1.554

APPENDIX 4B: STUDY 4B

Stimuli

Questionnaire Screenshots

On the next screen, you will see an advertisement. Please look at the advertisement carefully; be sure to consider any images or pictures as well as the copy.

>>

Please carefully view the following advertisement:

Integrated Accounting Services, LLC

Tax Services

Auditing and Accounting Services

Bookkeeping Services

Accounting Software Services

Business Payroll

Business Consulting

Learn More →

What are the first 3 things that come to mind when you look at this ad?

>>

On the following screens, you will be asked for your expectations of the accounting services from the advertisement that you just saw.

While you answer the questions, you will also see a number between 1 and 9 in a different color at the bottom of each screen. Please ignore these numbers and focus only on answering the questions.

>>

On the following screens, you will be asked for your expectations of the accounting services from the advertisement that you just saw.

While you answer the questions, you will also see a number between 1 and 9 in a different color at the bottom of each screen. Please add all of the numbers that you see together. You will be asked to report the total at the end. For example, if you see a 3 on the first screen, a 5 on the second screen, and a 2 on the third screen, you would report 10 when asked for the total at the end. Please do not write these numbers down, just remember the new total after each page.

>>

How accurate do you expect the service to be?

Not Accurate at All   Very Accurate

○   ○   ○   ○   ○   ○   ○

5

>>

How likely do you think there will be mathematical mistakes?

A lot of Mistakes   No Mistakes

○   ○   ○   ○   ○   ○   ○

7

>>

How good do you expect their customer service to be?

Very Poor   Very Good

○   ○   ○   ○   ○   ○   ○

2

`>>`

How likely is a tax return prepared by this service to have been done right?

Not Likely at All   Very Likely

○   ○   ○   ○   ○   ○   ○

3

`>>`

How likely do you think that it would be correct?

Not Likely at All   Very Likely

○   ○   ○   ○   ○   ○   ○

6

`>>`

How friendly do you expect the service to be?

Not Friendly at All   Very Friendly

○   ○   ○   ○   ○   ○   ○

1

>>

Please enter the sum total of the numbers you saw on each page.

>>

Who do you think is the primary target for this ad? By primary target, we mean what type of customer is this company trying to attract for their tax preparation service.

>>

Please think back to the advertisement you just saw.

Was there a person in the advertisement?
- ○ Yes
- ○ No

How realistic did you find this advertisement?

Not Realistic At All						Very Realistic
○	○	○	○	○	○	○

How believable to did you find this advertisement?

Not Believable At All						Very Believable
○	○	○	○	○	○	○

How distracted were you by the numbers on each question?

Not Distracted at All						Very Distracted
○	○	○	○	○	○	○

>>

Do you currently or have you in the past used the services of an accounting firm?

No	Yes
○	○

How familiar are you with the services of accounting firms?

Not Familiar at all						Very Familiar
○	○	○	○	○	○	○

>>

Principal Component Analysis

Rotated Factor Pattern		
	Factor1	Factor2
Friendly Service	0.832	0.124
Customer Service	0.781	0.320
Done Right	0.640	0.530
Correct	0.330	0.792
Accurate	0.394	0.687
Math Mistakes	0.066	0.551

Means & Standard Deviations

		Distracted	
		Mean	SD
High Cognitive Load	Asian Male	3.29	1.863
	White Woman	5.30	1.579
	White Man	4.17	2.139
	No Model	4.52	1.780
Low Cognitive Load	Asian Male	3.47	1.911
	White Woman	4.07	1.685
	White Man	3.16	1.930
	No Model	3.93	2.089

	Math-Related Attributes		Service Attributes	
	Mean	SD	Mean	SD
Asian Male	5.39	1.148	4.85	1.426
Caucasian Female	4.80	1.010	4.63	1.564
Caucasian Male	5.22	1.204	5.10	1.487
No Model	5.25	1.193	4.52	1.432

	Low Cognitive Load		High Cognitive Load	
	Mean	SD	Mean	SD
Math-Related Attributes	5.25	1.166	5.06	1.140
Service Attributes	4.53	1.620	5.10	1.234

APPENDIX 5A: STUDY 5A

Stimuli

PRESS RELEASE

<u>Frescodent Hires New Spokesperson</u>

Elizabeth Johnson

CHICAGO, Illinois, March 31, 2014 – In hopes of establishing itself as a major player in the market, Frescodent is promoting its new whitening toothpaste with a new spokesperson. The toothpaste brand recently signed Elizabeth Johnson as their new spokesperson. Elizabeth is a stay-at-home mom who writes for the popular and well-known blog Blogging Mamas, and spends her days caring for her family. Elizabeth will appear in a series of advertisements for Frescodent's new whitening toothpaste to be released next month.

Frescodent is a natural products company that has been producing oral care products since 2001. The company focuses on dental hygiene carrying high quality toothpaste, mouthwash, and dental floss products. Their products are all natural, contain no artificial sweeteners, flavors, or dyes, and all of their packaging is recyclable.

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Questionnaire Screenshots

Brands are often seen as having personalities. Try to think of Frescodent as if it were a person. To what extent do you think the following personality traits describe Frescodent?

	Never True						Always True
Tender	○	○	○	○	○	○	○
Sturdy	○	○	○	○	○	○	○
Sweet	○	○	○	○	○	○	○
Dominant	○	○	○	○	○	○	○
Sensitive	○	○	○	○	○	○	○
Daring	○	○	○	○	○	○	○

	Never True						Always True
Graceful	○	○	○	○	○	○	○
Brave	○	○	○	○	○	○	○
Fragile	○	○	○	○	○	○	○
Aggressive	○	○	○	○	○	○	○
Expresses Tender Feelings	○	○	○	○	○	○	○
Adventurous	○	○	○	○	○	○	○

	Never True						Always True
Domestic	○	○	○	○	○	○	○
Reliable	○	○	○	○	○	○	○
Tough	○	○	○	○	○	○	○
Honest	○	○	○	○	○	○	○
Responsible	○	○	○	○	○	○	○
Strong	○	○	○	○	○	○	○

	Never True						Always True
Genuine	○	○	○	○	○	○	○
Dependable	○	○	○	○	○	○	○
Outdoorsy	○	○	○	○	○	○	○
Cheerful	○	○	○	○	○	○	○
Efficient	○	○	○	○	○	○	○
Rugged	○	○	○	○	○	○	○

What is your attitude towards Frescodent Toothpaste?

Bad	○	○	○	○	○	○	○	Good
Negative	○	○	○	○	○	○	○	Positive
Unfavorable	○	○	○	○	○	○	○	Favorable

>>

Who do you think is the primary target for this toothpaste? By primary target, we mean what type of customer is this company trying to attract to purchase their toothpaste.

>>

Please think back to the press release you just saw.

How realistic did you find this press release?

Not Realistic At All   Very Realistic
○   ○   ○   ○   ○   ○   ○

How believable to did you find this press release?

Not Believable At
All   Very Believable
○   ○   ○   ○   ○   ○   ○

>>

Means & Standard Deviations

	Ruggedness	
	Mean	SD
Stereotypical Only	3.27	1.217
Stereotypical & Personal	3.93	1.396
No Stereotype	3.90	1.048

Scale Reliabilities

	Internal Consistency (Cronbach's Alpha)
Ruggedness	0.78
Sincerity	0.69
Competence	0.82
Masculine Brand Personality	0.81
Feminine Brand Personality	0.77

APPENDIX 5B: STUDY 5B

Stimuli

PRESS RELEASE

<u>President's Choice Launches New Campaign</u>

CHICAGO, Illinois, March 31, 2014 – In hopes of establishing itself as a major player in the market, President's Choice is launching a new advertising campaign to promote its new Chocolate Chip Pecan cookies. The campaign will also include a new spokesperson, actress Rebel Wilson. Rebel Wilson is an actress and comedian who has starred in such movies as Bridesmaids, Pitch Perfect, and What to Expect When You're Expecting. She will appear in a series of advertisements for President's Choice's new Chocolate Chip Pecan cookies to be released next month.

President's Choice is a baked goods company that has been producing high-quality gourmet, partially baked, and finished baked goods since 2001. The company focuses on baked goods and doughs, carrying high quality cookies, irresistible cakes, and prepared cookie dough. Their products are all natural and carefully crafted with the finest ingredients.

PRESS RELEASE

<u>President's Choice Launches New Campaign</u>

CHICAGO, Illinois, March 31, 2014 – In hopes of establishing itself as a major player in the market, President's Choice is launching a new advertising campaign to promote its new Chocolate Chip Pecan cookies. The campaign will also include a new spokesperson. She will appear in a series of advertisements for President's Choice's new Chocolate Chip Pecan cookies to be released next month.

President's Choice is a baked goods company that has been producing high-quality gourmet, partially baked, and finished baked goods since 2001. The company focuses on baked goods and doughs, carrying high quality cookies, irresistible cakes, and prepared cookie dough. Their products are all natural and carefully crafted with the finest ingredients.

"President's Choice cookies taste just like homemade: Made with real creamery butter and all-natural ingredients – a delicious combination that's impossible to resist."

"President's Choice cookies taste just like homemade: Made with real creamery butter and all-natural ingredients – a delicious combination that's impossible to resist."

"President's Choice cookies taste just like homemade: Made with real creamery butter and all-natural ingredients – a delicious combination that's impossible to resist." - Rebel Wilson

Questionnaire Screenshots

On the list below, please select ALL of the movies that you have seen. If you do not recall having seen the movie, please do not select it.
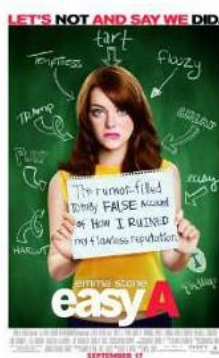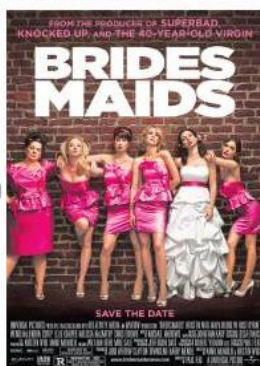
Please read the following press release carefully:

PRESS RELEASE

President's Choice Launches New Campaign

CHICAGO, Illinois, March 31, 2014 – In hopes of establishing itself as a major player in the market, President's Choice is launching a new advertising campaign to promote its new Chocolate Chip Pecan cookies. The campaign will also include a new spokesperson. She will appear in a series of advertisements for President's Choice's new Chocolate Chip Pecan cookies to be released next month.

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>>

Below is one of President's Choice's new advertisements featuring their new spokesperson. Please carefully view the following advertisement:

"President's Choice cookies taste just like homemade: Made with real creamery butter and all-natural ingredients – a delicious combination that's impossible to resist."

>>

Product rating

People often make evaluations and judgments based on very little information. Please think back to the President's Choice brand Chocolate Chip Pecan cookies you just saw advertised. Take a moment and imagine trying the cookies.

Please indicate your expectations of the cookies on the attributes below:

Not Tasty	○	○	○	○	○	○	○	Very Tasty
Very Low Calorie	○	○	○	○	○	○	○	Very High Calorie
Very Poor Nutrition	○	○	○	○	○	○	○	Very Good Nutrition
Very Inconvenient	○	○	○	○	○	○	○	Very Convenient
Very Unhealthy	○	○	○	○	○	○	○	Very Healthy
Not Indulgent	○	○	○	○	○	○	○	Very Indulgent
Not a Rich Flavor	○	○	○	○	○	○	○	Very Rich Flavor

Brands are often seen as having personalities. Try to think of President's Choice as if it were a person. To what extent do you think the following personality traits describe President's Choice?

	Not at all						Extremely
Daring	○	○	○	○	○	○	○
Glamorous	○	○	○	○	○	○	○
Tough	○	○	○	○	○	○	○
Fun	○	○	○	○	○	○	○
Spirited	○	○	○	○	○	○	○
Pretentious	○	○	○	○	○	○	○
	Not at all						Extremely
Strong	○	○	○	○	○	○	○
Playful	○	○	○	○	○	○	○
Imaginative	○	○	○	○	○	○	○
Charming	○	○	○	○	○	○	○
Outdoorsy	○	○	○	○	○	○	○
Entertaining	○	○	○	○	○	○	○
	Not at all						Extremely
Up-To-Date	○	○	○	○	○	○	○
Romantic	○	○	○	○	○	○	○
Rugged	○	○	○	○	○	○	○
Funny	○	○	○	○	○	○	○

What is your attitude towards the President's Choice brand?

Bad	○	○	○	○	○	○	○	Good
Negative	○	○	○	○	○	○	○	Positive
Unfavorable	○	○	○	○	○	○	○	Favorable

>>

Who do you think is the primary target for this ad? By primary target, we mean what type of customer is this company trying to attract to purchase their cookies.

[ ]

>>

How familiar are you with actress Rebel Wilson?

Not Familiar at All   Very Familiar

○   ○   ○   ○   ○   ○   ○

>>

Please think back to the advertisement you just saw.

How realistic did you find this advertisement?

Not Realistic At All   Very Realistic

○   ○   ○   ○   ○   ○   ○

How believable to did you find this advertisement?

Not Believable At
All   Very Believable

○   ○   ○   ○   ○   ○   ○

>>

Principal Components Analysis

Factor Structure (Correlations)		
	Factor1	Factor2
Rich Flavor	0.825	0.257
Tasty	0.671	0.143
Indulgent	0.743	0.417
Convenient	0.386	0.091
Healthy (Reversed)	0.178	0.821
Nutrition (Reversed)	0.196	0.746
High Calorie	0.436	0.664

Scale Reliabilities

	Internal Consistency (Cronbach's Alpha)
Excitement	0.82
Sophistication	0.65
Ruggedness	0.84
Playfulness	0.86

Means & Standard Deviations

	Rebel Wilson		Overweight Model		Normal Weight Model	
	Mean	SD	Mean	SD	Mean	SD
Excitement	4.09	1.168	3.89	1.329	3.63	1.377
Sophistication	3.52	0.872	3.40	1.326	3.35	1.132
Ruggedness	2.38	0.983	2.58	1.190	2.66	1.216
Playfulness	4.15	1.263	4.20	1.457	3.57	1.331
Unhealthy Attributes	5.50	0.886	4.57	1.303	5.10	1.107
Flavor Attributes	5.73	0.914	5.55	0.919	5.53	0.834