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The Match-Up Hypothesis Revisited: A Social Psychological Perspective

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Drawing on the social psychology literature, two studies are presented that examine the role of self-esteem and body-esteem in driving the effect of using highly attractive female imagery in ads targeting women. In two 2 × 2 experiments, model physical attractiveness and product category are manipulated. The results indicate that (1) while highly attractive female models perform better in the ads of attractiveness-related products, moderately attractive female models work better in the ads of non-attractiveness-related products and (2) self-esteem and body esteem play a significant role on how female imagery in ads relate to advertising effectiveness. We found rather consistent yet statistically insignificant evidence for the proposition that low self- and body esteem amplifies the reversal effect predicted by the "match-up hypothesis."

Keywords: the match-up hypothesis, women, self-esteem, body esteem, advertising effectiveness

A considerable share of ads targeting women are dominated by themes such as allure and sex-appeal channeled mostly through physically attractive models (Kilbourne, 1999; Sun, 2013). The psychology of this practice rests on the presumption of a physical attractiveness stereotype, whereby people are believed to consistently attribute positive qualities, such as socially desirable traits, to people who are physically attractive rather than unattractive (Dion, Berscheid, & Walster, 1972; Joseph, 1982). But does this practice indivertibly produce favorable results across all product categories and consumers?

Within the stream of research on the differential impacts different types of endorsers have on the endorsed brand, a group of studies have specifically focused on physical attractiveness as a basis for a match-up between an endorser and a product (Bower & Landreth, 2001; Kamins, 1990), mainly testing the proposition that attractive endorsers are more effective when endorsing products used to enhance

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one's attractiveness. In the present research, we set to offer further insights regarding this phenomenon by focusing specifically on the psychology of the women exposed to ads featuring physically attractive models. By doing so, we aim to investigate the psychological foundation on which the female imagery in the ad translates into an overall evaluation of the product, ad, brand, and the associated purchase intention.

Adopting a social psychological perspective, we offer a framework relating the use of highly attractive female imagery in the ads targeting women, product category, the psychological state of the women exposed to the ad, and advertising outcomes. In two experimental studies, physical attractiveness of the female model (highly attractive vs. moderately attractive) and product category (attractiveness related vs. non-attractiveness related) are manipulated to explore (1) the extent to which self- and body esteem of the women exposed to the ad function as a match-up factor, and (2) how they interact with the fit between product category and model attractiveness in determining the attitude toward the ad, the brand, product evaluations, and purchase intentions.

Our research has three theoretical implications. First, it offers a new angle to the general understanding of the underlying mechanism through which physical attractiveness of models featuring in ads affect advertising effectiveness. Extending the literature on the match-up hypothesis to include new match-up dimensions, we put forth experimental findings indicating that a woman's self-esteem and body esteem influence perceptions in response to the female imagery featured in the ads. Second, we found rather robust supportive evidence for the attractiveness match-up effect for advertising targeting women, across a wider set of advertising outcomes. Third, via showing how self- and body esteem of the woman exposed to the ad influence reactions associated with model attractiveness across different product categories, we set to offer a plausible explanation to reconcile the conflicting results in the literature regarding the endorser attractiveness–product category match-up effect (e.g., Kamins, 1990; Till & Busler, 2000).

Conceptual Framework

Physical Attractiveness of Models in Ads

Attractive people are considered to possess a myriad of righteous attributes, such as being sensitive, interesting, kind, strong, modest, sociable, sexually warm, successful, and outgoing (Dion et al., 1972; Eagly, Ashmore, Makhijani, & Longo, 1991). The notions of beauty, grace, and appeal attributed to highly attractive models (HAMs) have been found to reflect on the products they get paired with (Williamson, 1998). HAMs receive more sympathy than moderately attractive models (MAMs), and this sympathy transfers to the products and brands in these instances (Joseph, 1982). Based on these positive attributions, extant studies found that the use of HAMs in ads reflects positively on advertising outcomes (Kamins, 1990; Till & Busler, 2000).

Although, the assumption that beautiful women possess many favorable connotations constitutes the primary rationale for the frequent use of HAMs in ads, this practice has also been widely criticized (Martin & Kennedy, 1994; Richins, 1991). The highly attractive women displayed in the ads seem to have

a great divergence from the attractive woman that is seen in daily life, which may create implausibility and loss in credibility (Bower & Landreth, 2001). The use of highly attractive female imagery may also have negative effects on the psychological well-being of women, consequently proving ineffective and even irritating (Bower, 2001; Martin & Gentry, 1997; Richins, 1991). The equivocal nature of the findings regarding the effect of highly attractive versus moderately attractive woman in ads calls for a closer examination of the underlying mechanism through which this effect manifests. This research aims to contribute to the understanding of this phenomenon.

Representations of Highly Attractive Women in Advertising

Today's dominant approach to beauty stipulates being slender as one of the most crucial criteria for perfection. The idealized perfect woman image has very specific features, such as large eyes, raised eyebrows, small nose, full lips, accentuated cheekbones (Cunningham, 1986), as well as full breasts, flat stomach, firm hips, and long legs; the overall description totals to a slender and fit figure (Singh & Young, 1995). The highly attractive woman prototype imposed by the ads ends up being a Barbie-like idealized beauty profile. In contrast, a moderately attractive woman, who cannot measure up to all these criteria at once, can be described only as a normally beautiful female figure, lacking perfection. It is fair to say that ads mostly feature women of exceptional beauty and charm.

Attractiveness-Related Versus Non-Attractiveness-Related Products

The idea that the match-up between the physical attractiveness of the endorser and the product category drives advertising outcomes lies in the early research in advertising (Friedman & Friedman, 1979). Coined by the term *match-up hypothesis*, research on the fit between physical attractiveness and product category mainly rests on a clear categorization of products as *attractiveness-related* and *non-attractiveness-related*. In general, attractiveness-related products are defined as the products that enhance one's attractiveness (Kamins, 1990). Perfume, body oil treatment, facial cream, shampoo, and razors are examples of attractiveness-related products, mainly fitting into two distinct categories as beauty enhancing products and camouflaging products (Bower & Landreth, 2001).

Non-attractiveness-related products are defined as the products neither enhancing nor detracting from the user's physical attractiveness (Kamins, 1990). According to Choi and Rifon (2012), non-attractiveness-related products can be described as mainly utilitarian. Cold medicine, coffee, soft drinks, cheese, beer, facial tissue, pens, books, and personal digital assistants are treated as non-attractiveness-related products in the literature.

Although HAMs have been used in ads featuring both types of product categories, the match-up hypothesis predicts that ads of attractiveness-related products gain more from HAMs, mainly because the attractive model serves as a persuasive argument for the efficacy of the attractiveness-related product (Lynch & Schuler, 1994). Specifically, HAMs are assumed to know more about products that enhance beauty (Bower & Landreth, 2001). In a similar vein, Brumbaugh (1993) asserts that MAMs serve better in tissue ads, where the effect is driven by the notion that when compared with a HAM, a MAM seems more plausible to have experience on being sick. That is to say, model attractiveness–product category fit

matters, as it is assumed that HAMs are more competent to evaluate attractiveness-related products while MAMs are more competent to evaluate non-attractiveness-related health or hygiene products. This explanation resonates well with decades of research on implicit personality theory, which has demonstrated that the inferential relations between physical attractiveness and personal attributes can be partitioned by perceivers into content-specific types of evaluative meaning (Eagly et al., 1991). Yet, empirical findings in this domain seem to be equivocal. In one of the mostly cited works in the match-up hypothesis literature, Kamins (1990) did not find the predicted match-up interaction for attitude toward the brand and purchase intentions. Later, Till and Busler (2000), using pen and cologne as product categories, did not find any match-up effect on the basis of endorser attractiveness. On the other hand, several studies point toward a different direction. Using razor blades as an attractiveness-related product category, Kahle and Homer (1985) demonstrated that the use of an attractive celebrity led to a more favorable attitude toward the endorsed brand. Baker and Churchill (1977) also found that the use of a HAM works better in a perfume ad for men, whereas the use of MAMs seems to be more effective on coffee ads. Caballero and Solomon (1984) showed that higher sales volumes were achieved in tissue ads that use MAMs rather than HAMs. Following the mainstream research in the field, the effectiveness of product category as a match-up factor forms the first hypothesis of the present research.

H1a: *In the ads of attractiveness-related products, the use of a HAM will result in a more favorable overall evaluation of the ad when compared with the use of a MAM.*

H1b: *In the ads of non-attractiveness-related products, the use of a MAM will result in a more favorable overall evaluation of the ad when compared with the use of a HAM.*

The Role of Self-Esteem and Body Esteem

Self-perception theory suggests "individuals come to 'know' their own attitudes, emotions, and other internal states partially by inferring them from observations of their own overt behavior and/or the circumstances in which this behavior occurs" (Bem, 1972, p. 2). Rooted in self-perception theory, self-esteem represents the outcome of the individual's observations and evaluation of the self (Cast & Burke, 2002). Body esteem is defined as "the extent to which a person has positive feelings and beliefs about his/her physical characteristics, particularly those characteristics related to attractiveness" (Klaczynski, Goold, & Mudry, 2004, p. 310). Global self-esteem is affected by self-esteem in specific domains (Harter, 1985). The extent to which a culture emphasizes the importance of a specific domain for success in life predicts its influence on global self-esteem (Klaczynski et al., 2004). An individual's perception about attractiveness of his or her body is one of these domains, and because Western societies emphasize fitness and thinness as important determinants of success, self-esteem and body esteem are two concepts that are closely intertwined (Bloch & Richins, 1992).

Studies of Martin and Gentry (1997) and Richins (1991) indicate that women's self-esteem may be negatively affected when exposed to ideal female imagery in ads, which in turn may result in dissatisfaction with oneself. These studies have been guided by social comparison theory. According to social comparison theory (Festinger, 1954), people compare themselves with others to evaluate themselves. When people compare themselves to others and find that they do not measure up, they

experience envy and jealousy, which is called social comparison jealousy (Salovey & Rodin, 1984). Social comparisons of highly attractive people result in social comparison jealousy because of the evolutionary fear that the more attractive female may be better able to attract and win attractive potential mates (Bower, 2001; Dermer & Thiel, 1975). Women may also compare themselves with the models they see in ads (Bower, 2001; Richins, 1991), but as representations in ads are far from being equivalent to real-life appearances, this comparison produces dissatisfaction with the self and body (Richins, 1991).

Ample evidence suggests that being exposed to perfect female images may have detrimental psychological and physiological effects on women (e.g., Bower, 2001; Martin & Gentry, 1997; Richins, 1991). Cumulatively, these findings point toward a social comparison jealousy for female viewers when they are exposed to HAMs in ads. However, existing literature provides no concrete evidence on potential boundary conditions of or reversal effects associated with this negative affect reflecting on advertising effectiveness indicators. We posit that women's existing psychological state in terms of self- and body esteem may play a considerable role on how model attractiveness displayed in an ad relates to the resulting evaluation of the ad.

We draw on social comparison motives and self-esteem theory in formulating our conceptual framework. Women may compare themselves to models in ads for any one (or a combination) of three motives: self-evaluation, self-improvement, or self-enhancement (Martin & Kennedy, 1994). Martin and Kennedy (1994) found that self-evaluation and self-improvement are common motives when women compare themselves with models in ads, and it has been shown that these two motives result in differential effects on temporary self-esteem of the viewers. When self-evaluation is the primary motive for comparison—because models in ads are superior in terms of physical attractiveness—comparisons with models in ads temporarily lower female self-esteem. When self-improvement is the primary motive for comparison, models in ads serve as inspiring figures, and comparisons with them temporarily raise self-esteem in anticipation of an improvement in self-attractiveness (Martin & Gentry, 1997). Our anticipation is that women with high self-esteem at the time of ad exposure should react more positively toward HAM based on two reasons. First, as self-esteem has been demonstrated to protect individuals from strain caused by external factors (Brockner, 1988), women with high self-esteem should suffer less from a potential self-evaluation when compared with women with low self-esteem. Second, as high self-esteem people are more optimistic, unrealistic, and irrational in goal-setting behavior, they can commit to overly ambitious goals, such as attaining extreme beautifulness (Baumeister, Tice, & Hutton, 1989). Therefore, their tendency to naturally develop a self-improvement motive would be higher, especially when beauty is displayed within an attractiveness-related product category. Accordingly, we posit that women's existing psychological state in terms of self-esteem may play a considerable role on how model attractiveness displayed in an ad relates to the resulting evaluation of the ad.

Our main proposition is that when the overall self-evaluation of women (i.e., self-esteem), particularly with respect to their physical appearance (i.e., body esteem) at the time of exposure, is more positive, they will be more satisfied with the evaluative outcome of the social comparison they make between themselves and the female model in the ad. The resulting positive state of mind, coupled with pleasant feelings and heightened self-esteem, would in turn result in favorable evaluations of the ad. Following the same logic based on the social comparison theory, it is feasible to expect that low self-

esteem on behalf of the women exposed to the highly attractive female imagery in the ad, on the other hand, would result in increased levels of body dissatisfaction, leading to negative emotions, to be translated into unfavorable evaluations of the ad. Hence, a moderately attractive female image may constitute a more attainable benchmark for women with a low self- and body esteem.

H2a: Women with high self-esteem would evaluate ads featuring a HAM more favorably when compared with women with low self-esteem.

H2b: Women with low self-esteem would evaluate ads featuring a MAM more favorably when compared with women with high self-esteem.

H3a: Women with high body esteem would evaluate ads featuring a HAM more favorably when compared with women with low body esteem.

H3b: Women with low body esteem would evaluate ads featuring a MAM more favorably when compared with women with high body esteem.

Finally, because perfect models are specifically used in ads as a persuasive argument offering women beauty, glamour, and sex appeal as product benefits (Kahle & Homer, 1985; Lynch & Schuler, 1994), it is probable that ads featuring HAMs relate to these notions on a deeper psychological level and hence increase both the propensity of social comparison to take place and the intensity of the psychological outcomes of this process, especially for women with low self- and body esteem (Richins, 1991). When the product category is attractiveness related, it is more likely that women receive the message as intended by the advertiser (Kahle & Homer, 1985; Lynch & Schuler, 1994), and hence people with low self-esteem may be able to cope with the detrimental psychological effect induced by the highly attractive female imagery through rationalization (i.e., justifying the beautifulness of the model by her use of the beauty-enhancement product; see Lynch & Schuler, 1994; Mitchel & Olson, 1981). However, in case of a category mismatch (i.e., perfect model endorsing a non-attractiveness-related product), women would not be able to elicit a product related meaning from the HAM imagery in the ad, and hence, those who suffer from low self- and body esteem may have no means to cope with the intimidation caused by the immaculate beautifulness portrayed in the ad (Richins, 1991). In line with this logic, we posit that women with low self- and body esteem would be more negatively influenced by a HAM–non-attractiveness-related product category mismatch when compared with women with high self- and body esteem. In other words, we suspect a three-way interaction between model attractiveness, product category, and self- and body esteem. This asymmetrical mismatch effect, if supported by empirical evidence, has the potential to provide a plausible explanation for the contradictory findings on endorser attractiveness-product category match-up, because women's psychological states at the time of experimental treatment creates an uncontrolled heterogeneity in the research samples used in the extant studies.

H4: Self-esteem interacts with model attractiveness–product category fit in determining overall evaluation of the ad.

H5: *Body esteem interacts with model attractiveness–product category fit in determining overall evaluation of the ad.*

Study 1

Design of the Experiment

Highly Attractive Versus Moderately Attractive Female Model

A prestudy with 79 female participants was conducted to determine the highly attractive and the moderately attractive female images to construct the main experimental stimulus. Six candidate female models with different physical properties were selected from unfamiliar people of the same race to eliminate potential predispositions. Next, the models were photo manipulated to produce an image identical in all aspects, except for differentiating physical properties. Female models were positioned to have the same head room and were cropped from the knee above. The same type of lighting was used. The models were photographed from eye level to avoid any difference within the angle, and they were also positioned in a similar posture. To emphasize the body proportions, models were shown in lingerie. Moreover, the lingerie was photo manipulated in a black and plain fashion.

Participants were asked to grade each of the six created images on a 9-point scale (1 = "I would consider this woman to be close to a moderately attractive woman that we see in our everyday lives," 9 = "I would consider this woman to be close to the highly attractive woman that we see on commercial ads"). To avoid the potential effects of presentation order, all the images were shown in the same screen, providing the ability for the participant to compare and contrast the images during grading. The difference between the mean scores of the models with the lowest and highest scores was statistically significant ($MD = 4.91$; $t = 15.429$; $p < .001$); hence, they were used as the main treatment in the experiment.

Design of the Ads

A 2 × 2 (attractiveness category: highly attractive vs. moderately attractive female model; product category: attractiveness-related product vs. non-attractiveness-related product) factorial design is used. Body moisturizer was selected as an attractiveness-related product, whereas a daily use sanitary pad was selected as a non-attractiveness-related product. The price range of the product categories were selected to be similar. The brands featured in the ads were fictional to prevent past experiences to confound the experimental effects. "Cleany" was the brand name for the sanitary pad, and "Dreamy" was the brand name for the body moisturizer. The brand names and logos were designed to be identical to each other; the same typeface was used, and the same visual element was represented as one gray feather silhouette. The pale-pink packaging featured the brand name, logo, product category information, and some other illegible textual elements (i.e., ingredients, directions for use) to achieve a more genuine product visual (see Figure 1).

Figure 1. Ads used in Experiment 1.

Sample and Data Collection

The sample consisted of 277 female participants recruited via announcements delivered through Facebook and online forums. Volunteered participants were randomly placed into one of the four experimental conditions. After the placement, each participant received a link to one of the four survey types. The majority (81%) of participants were single, only 19% being married. Participant ages ranged from 18 to 35 years, with 117 (42.50%) aged 18–25 years and 160 (57.50%) aged 26–35 years.

The questionnaire started with an explanatory preface and comprised 43 questions. Participants were first asked to fill out the self-esteem and body-esteem scales, then were exposed to one of the experimental ads, followed by manipulation checks and attitude toward the ad questions.

Measures

The scales and items used in this study were taken from the literature. The original scales are used with no modifications. Brislin's (1970) back-translation method was used to ensure meaning equivalence. Self-esteem ($\alpha = 0.94$) and body esteem ($\alpha = 0.97$) were measured by Rosenberg's (1965) 10-item scale and Mendelson, Mendelson, and White's (2001) 23-item scale, respectively, each measured on a 5-point anchor (1 = totally disagree, 5 = totally agree). Attitude toward the ad ($\alpha = 0.95$) was assessed by Shiv, Edell, and Payne's (1997) three-item measure using a 7-point semantic differential scale.

Results

Manipulation Checks

Two nominal scales were used to examine whether the participants perceived the contrasting female model categories and product categories as intended. Participants selected whether the female imagery in the ad was either close to the moderately attractive woman that they see in their everyday lives or to the highly attractive woman they see on the commercial ads. Similarly, participants selected

whether the product was related with attractiveness or not. Results of Pearson chi-square tests indicated that the manipulations were successful ($p < .001$).

Hypothesis Testing

Data were analyzed on the basis of a two-way between-subjects ANOVA. The dependent variable was attitude toward the ad. Median splits were used to group the participants into self-esteem and body-esteem categories as low self-esteem ($n = 121$; $M = 3.02$)–high self-esteem ($n = 156$; $M = 4.42$) and low body esteem ($n = 121$; $M = 2.67$)–high body esteem ($n = 156$; $M = 4.14$). Although self-esteem and body esteem were found to be significantly correlated ($r = .61$, $p < .01$), 42 women scored low on self-esteem while scoring high on body esteem, while another 42 women scored high on self-esteem while scoring low on body esteem. The significant correlation supports that self-esteem and body esteem are closely related. Further, coexistence of poor body esteem and good self-esteem in a considerable number of participants provides factual support for the decision to take these two concepts into account separately in our research.

Table 1 summarizes means and standard deviations of the experimental conditions. Tables 2, 3, and 4 show two-way ANOVA results. The difference in the amount of variance among the groups was examined using Levene's test for equality of variance for each of the compared experimental conditions. This assumption was met for all cases.

Table 1. Means and Standard Deviations of Experimental Conditions—Study 1.

	MAM				*HAM*			
	Pad ($n = 68$)		*Moisturizer* ($n = 72$)		*Pad* ($n = 67$)		*Moisturizer* ($n = 70$)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Overall	3.05	1.30	2.37	1.12	4.15	1.25	4.82	1.26
Self-esteem								
Low	3.55	1.06	2.70	1.18	3.12	1.05	4.59	1.37
High	2.62	1.37	1.91	0.84	4.73	0.94	4.93	1.19
Body esteem								
Low	3.48	1.19	2.55	0.94	3.28	1.39	4.36	1.39
High	2.59	1.25	2.22	1.23	4.56	0.95	5.20	0.99

Hypothesis 1a and Hypothesis 1b predicted a match-up effect based on product category and physical attractiveness. The interaction effect between attractiveness category and product category was significant ($F = 20.27$, $p < .001$) in the predicted direction. The use of the highly attractive female model on the body moisturizer ad resulted in more favorable attitudes ($M = 4.82$) compared with the use of the same model on the sanitary pad ad ($M = 4.15$), and the mean difference was statistically significant ($F = 9.50$, $p < .005$). The use of moderately attractive female model on the sanitary pad ad resulted in more favorable attitudes ($M = 3.05$) compared with the use of the same model on a body moisturizer ad ($M =$

2.37), and the mean difference was again statistically significant (F = 10.86, p < .005). Thus, Hypothesis 1a and Hypothesis 1b are fully supported.

Table 2. Summary of Two-Way ANOVA Results.

Hypothesis	Source	*df*	*MS*	*F*
H1a–b	Attractiveness category (A)	1	218.53	143.92*
	Product category (P)	1	0.01	0.01
	A × P	1	30.77	20.27*
	Error	273	1.52	
H2a–b	Attractiveness category (A)	1	182.49	126.11*
	Self-esteem (SE)	1	0.75	0.52
	A × SE	1	50.05	34.59*
	Error	273	1.44	
H3a–b	Attractiveness category (A)	1	190.51	128.83*
	Body esteem (BE)	1	1.20	0.81
	A × BE	1	40.86	27.64*
	Error	273	1.48	

*p < .001.
MS = mean squares.

Hypothesis 2a and Hypothesis 2b predicted a match-up effect based on self-esteem and physical attractiveness. The interaction effect between the attractiveness category and self-esteem was significant (F = 34.59, p < .001) in the predicted direction. The use of the highly attractive female imagery resulted in more favorable attitudes for high self-esteem viewers (M = 4.84) when compared with women with low self-esteem (M = 3.86), and the mean difference was statistically significant (F = 20.35, p < .001). In ads featuring moderately attractive female models, attitude scores of women with low self-esteem were higher (M = 3.07) than those of women with high self-esteem (M = 2.30), and the mean difference was statistically significant (F = 11.89, p < .001). Thus, Hypothesis 2a and Hypothesis 2b are fully supported.

Hypothesis 3a and Hypothesis 3b predicted a match-up effect based on body esteem and physical attractiveness. The interaction effect between the attractiveness category and body esteem was significant (F = 27.64, p < .001) in the predicted direction. The use of the highly attractive female imagery resulted in more favorable attitude for high body-esteem viewers (M = 4.85) when compared with women with low body esteem (M = 3.94), and the mean difference was statistically significant (F = 18.20, p < .001). Thus, Hypothesis 3a is supported. In ads featuring moderately attractive female models, although the overall evaluation was negative in both cases, women with low body esteem tend to evaluate ads more favorably (M = 3.03), when compared with women with high body esteem (M = 2.38), and the mean difference was statistically significant (F = 9.90, p < .005). Thus, Hypothesis 3b is supported as well. Another important finding worth mentioning is the robust statistical significance of the independent effect of the attractiveness category, which remains significant even when the variance created by all other theoretical factors is accounted for.

Table 3. Summary of Three-Way ANOVA Results for Self-Esteem.

Source	*df*	*MS*	*F*
Attractiveness category (A)	1	177.71	137.82**
Product category (P)	1	0.05	0.03
Self-esteem (SE)	1	0.19	0.15
A × P	1	42.72	33.14**
A × SE	1	55.39	42.96**
P × SE	1	5.23	4.06
A × P × SE	1	8.19	6.35*
Error	269	1.29	

*p < .05. **p < .001.
MS = mean squares.

Table 4. Summary of Three-Way ANOVA Results for Body Esteem.

Source	*df*	*MS*	*F*
Attractiveness category (A)	1	178.05	136.46*
Product category (P)	1	0.76	0.99
Body esteem (BE)	1	3.18	3.16
A × P	1	37.64	25.08*
A × BE	1	46.22	31.09*
P × BE	1	0.07	0.01
A × P × BE	1	4.15	2.24
Error	269	1.35	

*p < .001.
MS = mean squares.

Hypothesis 4 predicted low self-esteem to amplify the negative effect of product category–model attractiveness mismatch on attitude toward the ad only in ads featuring HAMs. As shown in Table 3, the three-way interaction was significant with a relatively small effect size (F = 6.35, p < .05); hence, Hypothesis 4 was supported. In line with the hypothesis, the use of highly attractive female imagery failed to produce favorable ad evaluations only in the ads of sanitary pads and when the viewers had low self-esteem (see Table 2). Further, in that particular condition, MAM performed (M = 3.55) better than HAM (M = 3.12). Therefore, we observed that low self-esteem amplifies the reversal effect predicted by the match-up hypothesis (i.e., MAMs perform better in non-attractiveness-related products).

Hypothesis 4 predicted low body esteem to amplify the negative effect of product category–model attractiveness mismatch on attitude toward the ad only in ads featuring HAMs. As shown in Table 4, the three-way interaction was insignificant; hence, Hypothesis 5 was rejected. Despite the statistical

insignificance, in line with the hypothesis, the use of a highly attractive female model failed to produce favorable ad evaluations only in the ads of sanitary pads and when the viewers had low body esteem; and again, the MAM performed better than the HAM in that particular condition (see Table 1).

Discussion

Study 1 extends the literature on matching a product with an appropriate endorser. The primary contribution of the study is the discovery of the important role of the psychological state of the women exposed to the ad in matching a brand with an appropriate endorser on the basis of attractiveness. Although we found evidence for a product type by model attractiveness interaction, as would be expected under the traditional view of the "match-up hypothesis," our results suggest that self- and body esteem of the women exposed to the ad might be another potent driver of the "attractiveness" effect. Additionally, and very importantly, we identified a boundary condition for the attractiveness and product category fit. We observed that attitude scores of high self- and body esteem women exposed to a HAM in the ad of a sanitary pad (i.e., a mismatch on the basis of the match-up hypothesis) were higher than those of low self- and body esteem women exposed to a HAM in the ad of a moisturizer (i.e., a perfect match on the basis of the match-up hypothesis). Given the fact that self- and body esteem of women exposed to the ad was not controlled for in the prior studies, this observation has the potential to provide a plausible explanation for the discrepant results in the literature regarding the power of the match-up hypothesis on the basis of endorser attractiveness (e.g., Kamins, 1990; Praxmarer, 2011; Till & Busler, 2000).

We found conflicting results between the role of self-esteem and body esteem on the effect of attractiveness by product interaction on attitude toward the ad. Although the differences among the corresponding cell means were all in the hypothesized direction, the three-way interaction was statistically nonsignificant for body esteem. We suspect that this unexpected discrepancy could be attributed to the limitations of Study 1. First, the involvement level of the respondents with the product category constitutes an important potential source of uncontrolled heterogeneity in the sample. Specifically, the persuasiveness of model attractiveness might be higher in the high-involvement condition, whereas it might serve as a peripheral cue in lower involvement conditions (Bower & Landreth, 2001). Second, generalizability of results remains under question, with only two models representing each attractiveness condition. Third, more direct indicators of advertising effectiveness rather than a single overall assessment of the attitudinal reactions triggered by the ad are necessary for a more stringent test for our hypotheses. Finally, the online survey method employed in Study 1 gave us little control over the attention paid to the ads. A second study was employed to address these issues.

Study 2

Procedure and Measures

The sample consisted of 182 female participants. To tighten experimental control, the questionnaire was administered to subjects in a lab. The majority (78%) of participants were single, only 22% being married. Participant ages ranged from 18 to 35 years, with 85 (46.70%) aged 18–25 years

and 97 (53.30%) aged 26–35 years. The two new models used in the experimental ads are determined with the same procedure as in the first study (see Figure 2).

Figure 2. Ads used in Experiment 2.

A five-item involvement measure (Cho, 2003) was included in the questionnaire. Further, to capture a more detailed and stringent assessment of advertising effectiveness a three-item purchase intention (Hui & Zhou, 2002), a four-item product evaluation (Griffith & Chen, 2004), and a four-item attitude toward the brand (Ang & Lim, 2006) measure were included. Cronbach's alpha exceeded 0.90 for all multi-item measures, indicating a satisfactory level of internal consistency.

Results

Manipulation Checks

The manipulation checks were again employed by two nominal scales. Results of Pearson chi-square tests indicated that the manipulations were successful ($p < .001$).

Hypothesis Testing

Median splits were again used to group the participants into self-esteem and body esteem categories as low self-esteem ($n = 94$; $M = 3.17$)–high self-esteem ($n = 88$; $M = 4.60$) and low body esteem ($n = 87$; $M = 2.49$)–high body esteem ($n = 95$; $M = 4.13$). Tables 5, 6, 7, and 8 summarize means and standard deviations of the experimental conditions in Study 2.

Table 5. Means and Standard Deviations of Experimental Conditions for Brand Attitude—Study 2.

	MAM				*HAM*			
	Pad (n = 43)		*Moisturizer* (n = 46)		*Pad* (n = 49)		*Moisturizer* (n = 44)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Overall	3.09	1.30	2.47	1.20	3.84	1.07	5.17	0.94
Self-esteem								
Low	3.36	1.37	2.71	1.23	3.27	0.90	4.60	0.82
High	2.65	1.06	2.24	1.15	4.39	0.94	5.64	0.74
Body esteem								
Low	3.45	1.19	2.73	1.17	2.88	0.81	4.32	0.66
High	2.66	1.34	2.00	1.14	4.40	0.77	5.61	0.73

Table 6. Means and Standard Deviations of Experimental Conditions for Purchase Intention—Study 2.

	MAM				*HAM*			
	Pad (n = 43)		*Moisturizer* (n = 46)		*Pad* (n = 49)		*Moisturizer* (n = 44)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Overall	3.31	1.60	2.55	1.39	3.92	1.18	5.05	1.19
Self-esteem								
Low	3.65	1.36	3.45	1.74	3.44	1.20	4.28	1.03
High	2.18	1.34	2.73	1.23	4.37	1.12	5.69	0.91
Body esteem								
Low	3.76	1.20	2.85	1.36	3.03	0.98	4.09	1.06
High	2.73	1.77	1.98	1.26	4.43	1.03	5.55	0.94

Table 7. Means and Standard Deviations of Experimental Conditions for Ad Attitude—Study 2.

	MAM				*HAM*			
	Pad (*n* = 43)		*Moisturizer* (*n* = 46)		*Pad* (*n* = 49)		*Moisturizer* (*n* = 44)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Overall	3.16	1.48	2.53	1.41	3.86	1.22	5.11	0.91
Self-esteem								
Low	3.31	1.53	2.64	1.36	3.20	1.18	4.75	0.80
High	2.92	1.41	2.43	1.50	4.48	0.91	5.42	0.97
Body esteem								
Low	3.40	1.49	2.92	1.37	2.81	1.03	4.56	0.64
High	2.86	1.45	1.81	1.26	4.46	0.88	5.40	0.96

Table 8. Means and Standard Deviations of Experimental Conditions for Product Evaluation—Study 2.

	MAM				*HAM*			
	Pad (*n* = 43)		*Moisturizer* (*n* = 46)		*Pad* (*n* = 49)		*Moisturizer* (*n* = 44)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Overall	3.11	1.26	2.58	1.28	3.91	1.01	5.12	0.95
Self-esteem								
Low	3.31	1.31	2.91	1.24	3.45	0.87	4.50	0.80
High	2.76	1.13	2.25	1.27	4.35	0.94	5.63	0.75
Body esteem								
Low	3.54	1.02	2.93	1.26	3.07	0.80	4.33	0.67
High	2.57	1.35	1.94	1.11	4.40	0.78	5.53	0.82

Before examining our individual hypotheses, a multivariate test of covariance (MANCOVA) is employed to assess the overall effects on all four advertising effectiveness indicators. All four multivariate differences measures (Pillai's trace, Hotelling's trace, Wilks's lambda, and Roy's largest root) indicated significant differences in dependent measures for the attractiveness category ($p < .001$), two-way interaction terms for attractiveness category and product category ($p < .001$), attractiveness category and body esteem ($p < .001$), and attractiveness category and self-esteem ($p < .001$). None of the multivariate difference measures were significant for involvement, product category, self-esteem, body esteem, the two-way interaction terms of product category and body esteem, and product category and self-esteem, and the three-way interaction terms. Tables 9 and 10 show the results of the univariate tests.

Table 9. Results of the Univariate Tests Involving Self-Esteem—Study 2.

		Ad attitude		Brand attitude		Product evaluation		Purchase intention	
Source	*df*	*MS*	*F*	*MS*	*F*	*MS*	*F*	*MS*	*F*
Attractiveness category (A)	1	119.49	77.92*	133.99	119.74*	124.5	109.80*	110.68	70.70*
Product category (P)	1	4.88	3.18	6.36	5.69	5.58	4.92	2.14	1.37
Self-esteem (SE)	1	5.02	3.27	2.74	2.45	1.88	1.66	1.32	0.84
A × P	1	36.64	23.89*	37.16	33.21*	29.38	25.91*	32.92	21.03*
A × SE	1	17.84	11.63*	30.95	27.66*	29.29	25.83*	44.23	28.25*
P × SE	1	0.48	0.31	0.08	0.07	0.04	0.04	1.29	0.83
A × P × SE	1	1.75	1.14	0.27	0.24	0.34	0.3	0.22	0.14
Error	174	1.53		1.12		1.13		1.56	

*p < .001.
MS = mean squares.

Table 10. Results of the Univariate Tests Involving Body Esteem—Study 2.

		Ad attitude		Brand attitude		Product evaluation		Purchase intention	
Source	*df*	*MS*	*F*	*MS*	*F*	*MS*	*F*	*MS*	*F*
Attractiveness category (A)	1	102.64	74.56*	107.24	107.13*	106.64	105.96*	87.90	59.54*
Product category (P)	1	3.51	2.55	4.25	4.25	3.46	3.44	0.68	0.46
Body esteem (BE)	1	1.87	1.36	4.52	4.51	0.79	0.79	2.39	1.62
A × P	1	46.72	33.94*	42.87	42.82*	34.86	34.63*	38.88	26.34*
A × BE	1	45.37	32.96*	49.66	49.60*	52.88	52.54*	59.75	40.47*
P × BE	1	4.93	3.58	0.07	0.07	0.05	0.05	0.13	0.77
A × P × BE	1	0.15	0.11	0.23	0.23	0.04	0.04	0.02	0.91
Error	174	1.38		1.00		1.01		1.48	

*p < .001.
MS = mean squares.

Similar to the Study 1, the main effect of the model attractiveness category is significant and in the hypothesized direction across all four dependent variables. Providing support for Hypotheses 1a-b, the interaction term of product category and attractiveness category exerts significant effects on attitude

toward the ad (F = 23.89, p < .001), attitude toward the brand (F = 33.21, p < .001), product evaluation (F = 25.91, p < .001), and purchase intention (F = 21.03, p < .001). Providing support for Hypotheses 2a-b, the interaction term of self-esteem and attractiveness category exerts significant effects attitude toward the ad (F = 11.63, p < .001), attitude toward the brand (F = 27.66, p < .001), product evaluation (F = 25.83, p < .001), and purchase intention (F = 28.25, p < .001). Providing support for Hypotheses 3a-b, the interaction term of the body esteem and attractiveness category exerts significant effects on attitude toward the ad (F = 32.96, p < .001), attitude toward the brand (F = 49.60, p < .001), product evaluation (F = 52.54, p < .001), and purchase intention (F = 40.47, p < .001).

Contrary to expectations, the three-way interaction effects were insignificant, yet, again, in line with the hypotheses, the HAM failed to produce the desired effect only when the viewers had low self- and body esteem. Observe that in the ads of sanitary pads, when the viewers had low self-esteem, MAMs performed better than the HAMs in three out of four dependent variables (except for product evaluation); similarly, in the ads of sanitary pads when the viewers had low body esteem, MAMs performed better than the HAMs across all dependent variables.

Finally, and interestingly, the performance of the HAM for high self- and body esteem women in the mismatch condition (i.e., in the ad of a non-attractiveness-related product) was on par with its performance in the match-up condition (i.e., in the ad of an attractiveness-related product) for the low self- and body esteem women across almost all dependent variables (the mean differences were insignificant).

Discussion

These results cumulatively replicate and extend our findings in Study 1 across a wider set of advertising effectiveness indicators, accounting for the involvement factor, and under a tighter experimental control. Our results provide corroborative evidence for the conventional match-up hypothesis. More importantly, we found that highly attractive female imagery performs better for women with higher self- and body esteem, consistently across all advertising effectiveness indicators studied in this research. Further, we found rather consistent yet statistically insignificant evidence for the proposition that low self- and body esteem amplifies the reversal effect predicted by the match-up hypothesis. The HAM failed to produce favorable advertising outcomes only when the viewers have low self- and body esteem and are being exposed to an ad of a non-attractiveness-related product category, which corresponds to the only condition in which the MAM consistently outperformed the HAM.

Decades of research on social comparison jealousy suggest a potential negative effect of coupling products with HAMs in advertisements targeting women. Beyond what previous research has established, our research demonstrates a boundary condition for this hypothesis by identifying self- and body esteem as potent drivers of the effect of model attractiveness on advertising effectiveness.

It is surprising to see that only a handful of studies specifically focused on same-sex presenter effects on a female audience. Bower (2001) used a HAM to show that the negative affect generated as a consequence of social comparison negatively effects evaluations of both the model as a spokesperson and

the product argument. Bower's study provides a well-structured explanation on how the negative affective consequences of social comparison may influence ad processing and ad persuasiveness. However, because it does not demonstrate how the use of a MAM reflects on the outcomes of social comparison, it still leaves several issues open regarding the practical value of using HAMs as product endorsers. D'Alessandro and Chitty (2011) compared very thin and very fat female models using only attractiveness-related product categories, to find only weak results (i.e., finding support for only one out of three brand-related outcomes), showing that higher levels of attitude toward the brand was associated with very thin models. In a second study, they compared moderately thin and moderately fat models to find that respondents did not differentiate the models in terms of source credibility and attractiveness, yet purchase intent was higher for moderately thin models. Again, the case against the use of HAMs was indirectly justified, such that the slender model was compared against a fat model, not against a moderately thin model. The design of our study addressed these issues by comparing HAMs with MAMs across different product categories. In this research, HAMs indeed performed better in the ads of attractiveness-related products and when the woman exposed to the ad had high self- and body esteem, suggesting that both category fit and high self-/body esteem may attenuate the negative consequences associated with social comparison with HAMs (e.g., Bower, 2001). Further, the significant interactions identified in our research might be responsible for the discrepant findings regarding the positive effect of the very thin model on brand-related outcomes in the study conducted by D'Alessandro and Chitty (2011).

Drawing on associative learning theory, Till and Busler (2000) put forth that expertise may provide a more potent match-up factor than physical attractiveness. They used celebrities in their experiments, and hence the connection between the expertise of the endorser and the endorsed product was made rather obvious. In another study inspired by the "expertise effect," via dividing attractiveness-related products into problem-solving and beauty-enhancing products, using noncelebrity models, Bower and Landreth (2001) demonstrated that HAMs, when paired with a beauty-enhancement product, were perceived as having greater expertise and resulted in higher product evaluation. However, in their experiments, MAMs did not perform better than HAMs in problem-solving products. Because buying a body moisturizer to enhance one's attractiveness would be potentially salient for most of the women consumers, our results on attractiveness by category interaction corroborate the findings of both of these studies. On the other hand, by detecting that (1) a MAM may perform better than a HAM depending on the self- and body esteem of women exposed to the ad, and (2) the effect of using a HAM does not differ by product category when the body and self-esteem of the female audience is low, we showed that the effect of physical attractiveness by product category match cannot be solely reduced to the "expertise effect," and there might be other psychological variables in play.

Finally, although we did not measure the role of social comparison in mediating the effect of self- and body esteem on advertising effectiveness, in light of previous studies on body image, which have found that, as women tend to compare themselves more often with others they respond more negatively to attractive same-sex models (Bosch, Buunk, Siero, & Park, 2010), our results suggest that self- and body esteem at the time of ad exposure may have an influence on either the likelihood of women engaging in social comparison or the outcome of the naturally occurring social comparison. Further, the fact that in our research the HAM failed to produce favorable outcomes only when the viewers had low self-esteem and the category was non-attractiveness-related led us to speculate that women are more

likely to contrast themselves with the model when there is a mismatch between the product category and model attractiveness.

Limitations and Future Research

One potential concern regarding the attractiveness manipulation in our studies might relate to the fact that we did not use celebrities as endorsers. Our rationale was to avoid potential unrecognized effects related with familiarity. However, in reality, ads often use celebrities as endorsers, and the relevant literature is replete with studies examining the role of attractiveness of celebrity endorsers. Therefore, although we believe that our decision increased the internal validity of our results, it limits their applicability to scenarios involving familiar endorsers. Other positive perceived qualities associated with a familiar female endorser (i.e., trustworthiness, expertise), especially the potential effect of role-model identification, might overshadow the negative psychological effects related with her physical beauty (Amos, Holmes, & Strutton, 2008). Future research might extend our research to capture how different perceived qualities associated with a female endorser might influence the interaction between psychological state of the female observer and model attractiveness in ads.

Sometimes ads involve two models, often portraying the attractive model as enjoying the benefits of the product, while the other comparably less attractive model as deprived of enjoyment. As our findings indicate, an interaction with the psychological state of the viewer with model attractiveness on the screen, it is unknown to what extent the comparative use of models with different attractiveness levels would reflect on social comparison jealousy (Dijkstra & Buunk, 2002), as women with low self-esteem might identify with the comparatively less attractive model in the ad. Future research on this issue is heavy with significant implications for practitioners.

Although observed effects were mainly in the hypothesized direction, we failed to find a consistent significant three-way interaction among attractiveness, product category, and self- and body esteem. We suspect that our results might have been confounded because we did not control several constructs potentially pertaining to the underlying mechanisms of our hypothesis, such as the motive for social comparison, propensity for social comparison, state of mind, and intimidation. The statistical significance of our results might have been hampered by the uncontrolled heterogeneity in terms of these theoretically relevant constructs. Future research could consider having a more stringent control over these constructs.

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