

## Defensive reactions to slim female images in advertising: The moderating role of mode of exposure

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### ARTICLE INFO

#### Article history:

Received 4 October 2010

Accepted 19 July 2012

Available online 5 October 2012

Accepted by Julie Irwin

#### Keywords:

Self-evaluation

Denigration

Product evaluation

Defense mechanism

Cognitive resources

Semantic priming

Mode of exposure

Idealized images

### ABSTRACT

Across three studies, we examined the impact of exposure to idealized female images, blatantly vs. subtly, on females' self-evaluations, as well as attitude towards brands endorsed by the models with these idealized body images, in marketing communications. We theorized and showed that blatant exposure can elicit defensive coping, leading to a more positive self-evaluation and a lower brand attitude toward a brand endorsed by a model with an idealized body image. When exposure is subtle, however, idealized body images lead to lowered self-evaluations and increased evaluations of endorsed brands.

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### Introduction

Marketing communications are replete with idealized images of women, especially in products targeted at women. For instance, attractive female celebrities are routinely used in advertisements to endorse a wide range of women's products (Bower, 2001). Images of the "ideal female" also appear frequently in more subtle forms, such as the idealized female models who appear on one side of a magazine page, with the image of a product on the other side of the page, as in advertising for Skyy vodka. Thus, marketers must believe that these idealized images positively influence women's purchase decisions for these products.

Research on the impact of idealized female images, in advertising and other marketing contexts, on self-perception, however, provides inconsistent findings. On the one hand, viewing idealized female images can enhance women's body satisfaction and self-esteem (e.g., Henderson-King, Henderson-King, & Hoffman, 2001; Mills, Polivy, Herman, & Tiggemann, 2002; Myers & Biocca,

1992), which could potentially lead to more positive attitudes toward advertisements and products, associated with the female ideal (Kahle & Homer, 1985). On the other hand, exposure to idealized female images can result in negative moods (Hawkins, Richards, MacGranley, & Stein, 2004; Stice & Shaw, 1994), decreased body satisfaction (Hawkins et al., 2004) and decreased self-assessed attractiveness (Smeesters & Mandel, 2006), potentially leading to effects opposite to that sought by the marketer (Micu, Coulter, & Price, 2009).

It is, therefore, important to understand when we might expect positive effects of idealized body images in marketing communications on self-perception, and how that influences purchase decisions. We build on recent research attempting to address these questions in three ways: First we offer a conceptualization of how idealized images influence consumer response in terms of self-perception and product evaluation. We argue that a female viewer's self-perception and consequent effects on product evaluation depend on the degree of attention paid to an idealized female image in marketing communications during exposure. Following Tesser's (1988) theoretical speculation, we theorize that exposure to an idealized female image elicits a default negative affect stemming from an automatic upward social comparison with the image, leading to a more negative self-image. When the message recipient is consciously aware of the source of the decrement in self-image, a

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conscious and active, self-defensive process of self-repair takes place, with the message recipient denigrating the idealized images and, thus, improving their own self-image. Moreover, this denigration influences the evaluation of the advertised products associated with such images negatively—this has never been empirically examined before. In contrast, when message recipients are not consciously aware of the idealized source, the defense mechanism is muted, leading to a decrement in self-image, which in turn leads to greater acceptance of the endorsed product, as a means to attain the ideal (Kamins, 1990; Micu, Coulter, & Price, 2009).

Second, we test our theorizing about the elicitation of a defense mechanism when attention is directed at idealized body images, by examining a previously unexamined but important moderator: whether the idealized body images are presented blatantly or subtly. Identification of this boundary condition is important because (1) marketers use both blatant and subtle threats to the self, (2) it helps us test our conceptualization above, and (3) this boundary condition helps us resolve inconsistent findings in the extant literature, such as why consumers feel positive about their self-image and denigrate thin models when invited to contemplate the attractiveness of thin models (e.g., Bower, 2001; Duke, 2002), but feel bad about their self-image when exposed to attractive images in the context of a separate task (Richins, 1991).

Third, we are the first to experimentally explore the impact of active coping with the threat elicited by idealized body images and its consequent effects on product evaluations.

#### *Differential effects of idealized images: A social comparison perspective*

According to Festinger's (1954) social comparison theory, individuals engage in self-evaluation whenever they encounter a comparative other. That is, information about the comparative other is used as a basis for assessing their self-view (e.g., Richins, 1991; Trampe, Stapel, & Siero, 2007). Whether the outcome of this social comparison process is positive or negative for one's self-view depends on the characteristics of the comparative other and the individual (Häfner, 2009; Smeesters & Mandel, 2006; Smeesters, Mussweiler, & Mandel, 2010; Trampe et al., 2007). In this research we suggest that *mode of exposure* can also influence the outcome, a factor that has not been considered previously but which is particularly important and relevant in the marketing context.

#### *The moderating role of mode of exposure: Eliciting dual processes*

In marketing communications, the mode of exposure to idealized images can be blatant or subtle. In the blatant mode, the message recipient deliberately attends to the idealized nature of the image and is consciously aware of the idealized image and its presence in the marketing stimulus. In the subtle mode, the message recipient does not deliberately attend to the idealized nature of the image and, as a result, does not consciously connect the idealized image to the marketing stimulus.

In previous research, when the experimental context did not draw attention to the idealized images, akin to our subtle exposure condition, an unconscious upward social comparison process resulted (e.g., Bargh, 1994, 2002; Bargh & Ferguson, 2000). In such contexts, the unconscious social comparison process is likely to lead to a reduced self-image, as reported, for example, in Richins (1991).

When attention is explicitly drawn to an idealized image, in addition to this unconscious comparison process, we suspect that there is likely to be a conscious process that might override, or at least obscure, the impact of the unconscious process. Building on the theoretical speculations of Duke (2002) and Tesser (1988) we suggest that when the viewer is consciously aware of the superior

features of an idealized image (e.g., their slimness) that threatens their self-views, the viewer makes a conscious effort to restore a positive self-view by employing defensive coping strategies (Tesser, 1988).

The use of self-defensive strategies in response to threat has been documented in the past. These strategies involve self-enhancement through the derogation of the comparative other that is the source of the threat (e.g., Gibbons & McCoy, 1991; Häfner et al., 2008; see also Baumeister, Smart, & Borden, 1996; Fein & Spencer, 1997). Thus, we hypothesize that when exposure mode is blatant, message recipients are likely to be consciously aware of the threatening features of the idealized image, and, thus, respond defensively and denigrate the idealized image, to boost and restore their self-views.

#### *Product evaluation*

Thus far we have considered the impact of idealized images on self-views as a function of blatant vs. subtle exposure mode. How will these effects on self-views influence the evaluation of marketing communications and products? When exposure is blatant, because consumers denigrate the idealized image to repair their self-view, the idealized characteristic in the image is likely to become associated with negative reactions. As a result, under blatant exposure, marketing communications that contain idealized body image cues are likely to be judged negatively. When exposure is subtle, however, endorsed products in marketing communications that contain idealized body images are likely to be judged positively, as in the absence of conscious awareness of the source of the reduced self-view the product is likely to be seen as a way to attain the ideal and restore one's self-view.

We test these hypotheses in three studies. Study 1 establishes that the mode of exposure to idealized body images affects self-perception. Specifically, blatant exposure to idealized slim body images leads to a more positive self-perception compared to subtle exposure. Study 2, tests whether this observed effect in Study 1 is due to the activation of a self-defensive mechanism that denigrates the idealized slim body image, as we propose. Study 3 extends our research to a marketing context and examines whether the defense mechanisms thus far observed in response to blatant exposure to idealized slim body images leads to a more negative evaluation of products endorsed by marketing communications that contain idealized slim body images, but a more positive evaluation, when exposure is subtle.

#### **Study 1**

The goal of Study 1 was to provide evidence that viewers when exposed to idealized slim female images blatantly, are likely to react defensively and report more positive self evaluations compared to those exposed to the idealized slim images subtly. In order to manipulate the blatantness of exposure, we devised two sets of instructions that were presented to participants prior to the presentation of the idealized images; one group of participants were told that they would complete an attractiveness judgment task, and another group of participants were told that they would complete a sunglasses evaluation task. These instructions were expected to alter how explicitly participants attended to the slimness of the idealized slim female images.

#### *Participants and design*

Thirty-seven Caucasian females who spoke English as their native language were recruited for Study 1 from Introduction to Psychology classes at a major Canadian university. The students received course credit in exchange for their participation.

### Mode of exposure

We manipulated blatant vs. subtle exposure mode by manipulating the type of photograph judgment task that participants undertook. At the beginning of the experiment, all participants were presented with the same series of female photographs. One group of participants was required to make an attractiveness judgment based on a seven-point rating scale ranging from 1 (*not very attractive*) to 7 (*very attractive*). Another group was required to make a judgment about which of two pairs of sunglasses were most suitable for the female presented in each of the photographs. For the sunglasses judgment, participants were presented with the female photograph along with two photographs of randomly chosen sunglasses. The participants were instructed to choose the sunglasses that best-suited the facial shape of each woman that appeared in the photographs.

Two pretests were conducted to ensure that we had a strong manipulation. The first pretest was to ensure that the set of photographs of idealized female images used in this study were indeed perceived as having an ideal image along the slimness dimension. The second pretest was to ensure that the exposure mode manipulation worked as intended, to draw differential attention to the idealized images.

### Pretest of female photographs

Fifty-two participants drawn from the same pool as the main study were asked to judge the slimness of the females in a set of 30 photographs of Caucasian women using a scale from 1 (not very thin) to 7 (very thin), with a midpoint of 4 (average). The females in the photographs were all directly facing the camera. Half the photos were “head shots” and half showed the head and upper body. Twenty photographs depicted very slim females and 10 depicted females that were about average in terms of slimness. Results showed that participants found the women as being thinner than average,  $t(51) = 9.90$ ,  $p < .001$  ( $M_{\text{thinness}} = 4.64$ ,  $MSE_{\text{thinness}} = 0.65$ ). Thus, despite the range of women that participants were presented with, the women in the photographs were perceived as being slimmer than average.

### Pretest of mode of exposure

To ensure that the instructions produced the desired effects on the allocation of participants' cognitive resources, we collected data from a separate group of participants from the same pool as the main study who were either exposed to idealized slim female images blatantly (attractiveness rating task) or subtly (sunglasses task conditions). Identical to the main study, one group of participants was instructed to judge the attractiveness of each female image, and the other group to judge the type of sunglasses that best suited the female image. They then completed a filler task in which they were asked to unscramble a series of scrambled sentences (the full set of details regarding the procedure used can be found below). The extent to which participants attended to the slimness of the females in the photographs after receiving the attractiveness judgment instructions and the sunglasses judgment instructions was examined using the following items: “When I looked at the images, I was *evaluating* the attractiveness of those images,” “When I looked at the images, I was *thinking about* the attractiveness of those images,” and “When I was viewing the images, I was *paying attention* to the attractiveness of the women”. Participants were asked to rate their response to each statement along seven-point rating scales anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). Participants' ratings for these three items were averaged to form an index for attention focus ( $\alpha = .92$ ). An ANOVA, treating mode of exposure (attractiveness task vs. sunglasses task) as a between-participants factor, yielded a significant main effect,  $F_{(1,72)} = 4.52$ ,  $p < .05$ , with those in the attractiveness rating condition paying more attention than those in the sunglass selection

condition ( $M_{\text{sunglasses}} = 4.99$  vs.  $M_{\text{attractiveness}} = 5.73$ ). Thus, our manipulation of exposure mode appeared successful.

### Filler task

Forty-five scrambled sentences were constructed and used as a filler task in the main study. Each sentence consisted of an initial, representing a name, followed by four scrambled words. Participants were instructed to generate a meaningful sentence by eliminating one of the four scrambled words and rearranging the three remaining words.

### Procedure

Participants were guided through the experiment in groups of approximately 20 people. When participants arrived at the testing area, they were informed to take part in three separate computer-mediated experiments. In reality, they participated in three phases of the same experiment. The first phase required participants to either judge the attractiveness of female images that were displayed or judge sunglasses that best-suited the face-shape of the female images that were displayed, as described earlier.

Next, participants were provided with instructions for the sentence unscrambling task. Participants were then presented with the scrambled sentences. Each sentence was presented individually on a computer screen and the participant wrote the solution to the sentence on one of the sheets provided.

In the last phase of the experiment, participants were asked to fill out a life style survey containing both filler items and items from the Body Esteem Scale (BES). The BES provides information on participants' self-evaluations on 45 body traits including sexual attractiveness, weight concerns, and physical condition with five-point Likert scales anchored by 1 (*having strong negative feelings*) and 5 (*having strong positive feelings*; Franzoï & Shields, 1984). The dependent measures were constructed from these items as described later.

In order to support the cover story that participants were taking part in three separate experiments, a pause was inserted between each phase of the experiment which contained the text, “PLEASE WAIT WHILE THE NEXT EXPERIMENT LOADS”. In addition, font and background changes of online experiments were made for each phase. To ensure that participants did not connect that the three phases of the experiment were connected, they were probed about this at the end of the experiment. Three participants suspected a connection and were dropped from further analyses.

### Results and discussion

The 10 weight-related body trait concerns from the BES scale were averaged ( $\alpha = .93$ ) into a body weight satisfaction index with high values meaning more positive feelings with ones' weight-related body parts (items such as waist, thighs, legs, hips, figure, and weight). This was the main dependent measure as it directly related to slimness, the manipulated dimension of the idealized image. We also constructed measures of sexual attractiveness satisfaction by averaging the 14 items pertaining to this BES subscale (such as body scent, body hair, chin, sex drive, and sex activities,  $\alpha = .89$ ) and physical condition satisfaction by averaging the nine items relating to this BES subscale (physical coordination, agility, health, and reflexes,  $\alpha = .91$ ). We were curious to see whether the effects of our manipulation would spill over more broadly to one's related self-image dimensions, or be limited to the dimension made salient by our manipulation.

The three subscales were submitted to a mixed model ANOVA analysis with mode of exposure (attractiveness task vs. sunglasses task) as the between-participants factor and the three subscales as a within-participant factor. We obtained a marginally significant

interaction effect between the BES subscales factor and mode of exposure ( $F_{(1,36)} = 2.16, p < .056$ ).

To understand the nature of the interaction we conducted three separate ANOVAs, one for each of the three subscales of the BES with exposure mode as the independent factor. Supporting our prediction, there was a significant effect of mode of exposure on the weight related BES subscale,  $F_{(1,36)} = 4.11, p < .05$ . Participants who performed the sunglasses judgment task (subtle exposure condition), reported more negative self-evaluations of their weight-related body traits ( $M_{\text{sunglasses}} = 2.91$ ), as would be expected as a result of the automatic upward comparison process that such images are likely to trigger, while those who performed the attractiveness judgment task (blatant exposure condition) reported more positive self-evaluations, as would be expected due to the conscious self-defensive processes expected to be triggered under this condition.

Evaluations of sexual attractiveness and physical condition were not affected by the mode of exposure (all  $F_s < 1$ ), suggesting that the impact of the idealized body image influenced only the relevant self-image dimension, but not other related self-image dimensions.

Study 1 demonstrates that mode of exposure to idealized female images determines participants' body self-evaluations. Specifically, focusing on the attractiveness of the females with the idealized slim images was associated with more positive body perceptions compared to the focus on the shape of the face of the same images in the context of the sunglasses judgment task. As we have noted earlier, we likely observed this result because viewers actively denigrate the comparison targets (e.g., Baumeister et al., 1996; Engeln-Maddox, 2005; Fein & Spencer, 1997) to dismiss the threat the superior comparative others impose on self-views. We test the proposed underlying mechanism in Study 2.

## Study 2

To directly examine the proposed underlying mechanism, in Study 2, we manipulated the interpretive frames of the idealized slim images—positive frame (idealization cues) and negative frame (denigration cues). If as we argue, under the subtle mode of exposure, participants report lower self-evaluations due to a lack of a defensive mechanism to shield them from the negative effect of upward social comparison with the idealized images, then a negative interpretive frame for the idealized body images should work as a defensive coping mechanism. It should do so, by changing the unconscious interpretation of the idealized images, making participants rate themselves more positively. Participants provided a positive interpretive frame, should, however, rate their self-images relatively lower, as the positive interpretive frame should make the unconscious comparison even more extreme and, thus, more damaging to the self. Thus, we would expect a more positive self-image under a negative framing of the idealized image, compared to a more positive framing, in the subtle exposure condition.

Participants in the blatant mode of exposure condition should show the opposite pattern: Participants exposed to a positive interpretive frame should react in a more strongly defensive manner, leading to a more positive self-image. Exposure to a negative interpretive frame, however, should lead to a negative interpretation of the idealized image, and attenuate the elicitation of the defensive mechanism, leading to a less positive self-image.

The procedure and dependent measures of Study 2 were identical to Study 1, with two exceptions. First, the filler task in Study 1 was replaced by a sentence unscrambling task that primed participants with either denigrating or idealizing cues. Second, one more phase was added to the experiment where participants were asked to evaluate the female images along a number of trait dimensions.

Thus, there were four phases in Study 2. As in Study 1, mode of exposure was manipulated first using the same task as in Study 1. Next, we manipulated the interpretive frame using the sentence unscrambling task, the details of which are presented below. Thereafter, we measured the self-image using the Body Esteem Scale, as in Study 1. In the fourth and final phase, we measured the evaluation of the target females collectively along several trait dimensions, to measure target denigration, our hypothesized mediator.

### Participants and design

One hundred and twelve Caucasian females who spoke English as their native language were recruited in exchange for course credit from a major Canadian university. They were randomly assigned to the four cells of our design (mode of exposure (subtle vs. blatant)  $\times$  interpretive frame (denigrating vs. idealizing)).

### Subtle contextual cues

To activate either a negative (denigrating) or positive (idealizing) interpretation of the idealized female images, sentences containing positive or negative key words were constructed for this experiment. The scrambled sentences were constructed based on the sentences used by Bargh, Chen, and Burrows (1996). Each sentence consisted of five words. The participant was required to eliminate one word and create a sentence using the remaining four words. Each participant was presented with a set of 15 scrambled sentences, which included seven filler sentences. For the participants receiving the positive or idealizing frames, eight of the scrambled sentences contained a key word complimentary to the thin female ideal (e.g., slim, hot). For the participants in the negative or denigrating frame conditions, eight of the scrambled sentences contained a word disapproving of thin the female ideal (e.g., fake, bony). Importantly, to minimize the likelihood of participants becoming aware of our manipulation of contextual cues, positive and negative adjectives relating to female thinness were unrelated to this trait within the unscrambled versions of each of the sentences. For example, the unscrambled version of the sentence, "margins the write are thin", would be "the margins are thin" (see Appendix A). As in Study 1, participants were led to believe that all four phases of the experimental session represented four separate, unrelated experiments. These measures helped to ensure that the impact of the subtle contextual cues generated by the sentence unscrambling task would occur implicitly and that participants would not be aware of their influence.

### Impression formation task

To measure whether participants were indeed denigrating the females depicted in the photographs, they were asked to complete an impression formation task. For this task, participants were required to judge how accurately a number of statements described collectively the females that were presented in the photographs, during the first part of the study. These statements included items that were previously used by Willis and Todorov (2006), and items that were generated by the researchers for the impression formation task. Participants rated how accurately the following traits described the women: *intelligent, hard-working, make a good leader, respectable, likable, competent, honest, dependable, emotionally stable, ambitious, and leads a good life* on a scale ranging from 1 (*not at all accurate*) to 9 (*extremely accurate*). They also rated how likely they would want to be friends with the women, and include them in your group of friends if they were to interact with the women on a scale ranging from 1 (*not at all likely*) to 9 (*extremely likely*).

We also included a probe question inquiring whether participants thought that the "four experiments" were related. Two

participants suspected a connection and were eliminated from the analyses, leaving 110 usable responses.

## Results and discussion

### Body Esteem Scale

As in Study 1, three subscales of the BES were created (body weight subscale,  $\alpha = .91$ ; physical toning subscale,  $\alpha = .90$ ; sexual attractiveness subscale,  $\alpha = .92$ ) and entered as dependent variables in a three-way mixed model ANOVA analysis with mode of exposure and interpretive frame as between-participant factors and the three BES subscales as a within-participant factor. Consistent with expectation, a significant three-way interaction between BES subscale, mode of exposure, and interpretive framing ( $F_{(1,109)} = 5.28, p < .01$ ) emerged. To probe the interaction, we ran separate ANOVAs with the mode of exposure and interpretive frame as two between-participant factors for each of the BES subscales. The separate ANOVAs yielded a significant interaction effect of mode of exposure and interpretive frame on the weight subscale of BES ( $F_{(1,109)} = 18.13, p < .001$ ). There were no significant main or interaction effects for the physical condition BES subscale ( $ps > .10$ ) or for sexual attractiveness BES subscale ( $ps > .10$ ), as in Study 1.

Follow up contrasts revealed that, as predicted (see Fig. 1a), in the subtle exposure condition, participants rated themselves more positively when they received a denigration prime than an idealization prime ( $M_{\text{denigrating}} = 3.25$  vs.  $M_{\text{idealizing}} = 2.54, F_{(1,109)} = 3.89, p < .05$ ), but in the blatant exposure condition those receiving an idealization prime reacted more defensively and rated themselves more favorably, than those receiving a denigration prime ( $M_{\text{idealizing}} = 3.56$  vs.  $M_{\text{denigrating}} = 2.81, F_{(1,109)} = 6.63, p < .01$ ).

Additionally, since we predicted that participants in the blatant exposure conditions engaged in defensive coping, but not those in the subtle exposure condition, we expected and observed that the denigration prime benefited the self-rating of participants in the subtle exposure condition more ( $M_{\text{subtle}} = 3.25$  vs.  $M_{\text{blatant}} = 2.81, F_{(1,109)} = 5.15, p < .05$ ). Participants in the positive frame condition, that is those receiving idealized primes, in the blatant exposure condition, where defensive coping was active, were expected to

react in a more strongly defensive manner, leading to a more positive self-image. We expected the opposite for those in the subtle exposure condition; that is, participants would have a lower self-image in this condition. Consistent with this our data revealed that in the idealized prime condition blatant exposure led to a more favorable self-image than subtle exposure ( $M_{\text{blatant}} = 3.56$  vs.  $M_{\text{subtle}} = 2.54, F_{(1,109)} = 7.15, p < .001$ ).

### Model rating

During the impression formation task, participants evaluated the females that were depicted in the photographs along 13 dimensions. Participants' responses across all 13 items were found to be highly reliable ( $\alpha = .91$ ). Therefore, we averaged participants' responses across the 13 items into an overall personality rating. A lower score on this scale indicates greater denigration.

Submitting participants' overall personality rating into a  $2 \times 2$  ANOVA revealed a significant interaction between mode of exposure and interpretive framing,  $F_{(1,109)} = 7.72, p < .01$  (see Fig. 1b). The main effects of mode of exposure and interpretive framing were not significant ( $ps > .05$ ). With follow up planned contrasts, using model rating as a measure of defensive coping, we expect that in the blatant exposure condition, participants are more likely to denigrate the models when the interpretive frame is positive than negative. Consistent with this we found that positive interpretive framing of the images triggered more defensive denigrating reactions ( $M_{\text{idealizing, positive frame}} = 5.13$  vs.  $M_{\text{denigrating, negative frame}} = 5.71, F_{(1,109)} = 3.63, p < .05$ ). Also, as expected, participants in the subtle mode of exposure conditions do not engage in defensive coping and there is no difference in model rating across the two interpretive frame conditions ( $F_{(1,109)} = 3.46, p > .05$ ).

Findings of additional contrasts also demonstrated that idealization of the models triggered more defensive reactions among participants in the blatant exposure condition than in the subtle condition, as the models were rated more negatively ( $M_{\text{blatant}} = 5.13$  vs.  $M_{\text{subtle}} = 6.35, F_{(1,109)} = 6.86, p < .01$ ). When the interpretive frame is negative, participants in the subtle and blatant exposure conditions evaluate the models similarly ( $M_{\text{blatant}} = 5.27$  vs.  $M_{\text{subtle}} = 5.71, F_{(1,109)} = 1.48, p > .10$ ). This is likely because the framing provides a similar interpretation, and since this is negative, those in the blatant condition do not engage in

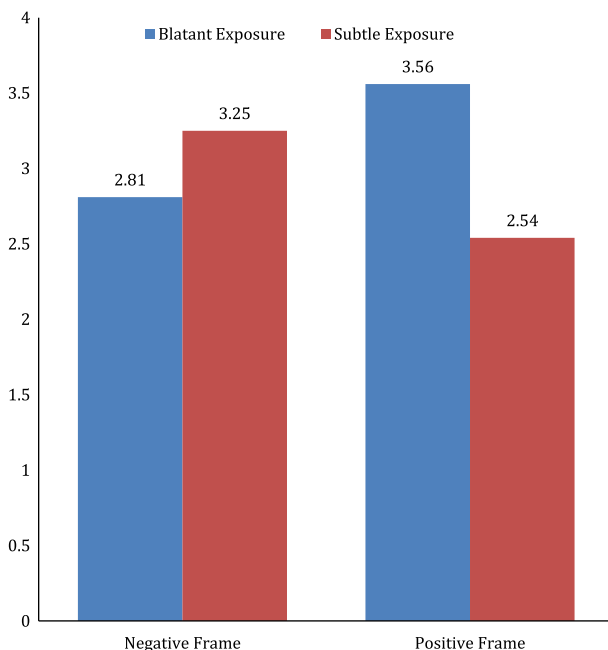


Fig. 1a. Study 2: effect of attention focus and contextual cues on BES weight subscale.

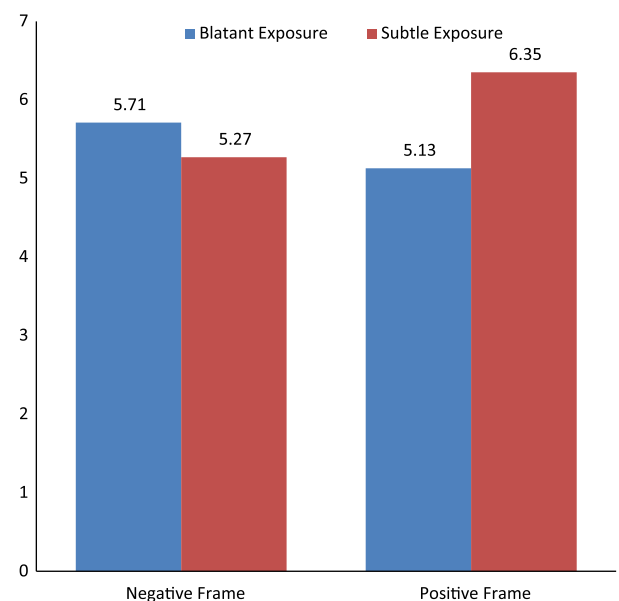


Fig. 1b. Study 2: effect of attention focus and contextual cues on model rating.

deliberate defensive coping processes, making their evaluations similar to that of those in the subtle exposure condition.

#### Test of mediated moderation

We had theorized that blatant exposure would trigger denigration of the idealized images. Moreover, in this study, we had argued that this denigration would be stronger when the interpretive frame was positive. In other words, we expected the personality ratings to mediate the interaction effect of mode of exposure and interpretive framing on the BES weight subscale. We thus tested for mediated moderation, and did so using the test recommended by Muller, Judd, and Yzerbyt (2005), after mean centering all the independent variables as recommended by Irwin and McClelland (2001). We first regressed the BES weight subscale on attention focus (manipulated variable  $X$ ), interpretive framing (moderator  $Mo$ ), and the interaction term between the two (Eq. (1) in Table 1). We then regressed the ratings of the models (Mediator,  $Me$ ) on the same predictors (Eq. (2) in Table 1). Lastly, we regressed the BES weight subscale on attention focus (manipulated variable  $X$ ), interpretive framing (moderator  $Mo$ ), and the interaction term between the two ( $XMo$ ), the model rating which served as the mediator ( $Me$ ), and an interaction term between ratings of models and the interpretive framing ( $MeMo$ ) (Eq. (3) in Table 1). The final model was significant ( $R^2 = .26$ ,  $F = 7.09$ ,  $p < .001$ ) and we found a partial mediation of ratings of others on the interaction effect of attention focus and contextual primes on self-evaluations. That is, in the full model, the interaction effect of attention focus and interpretive framing is still significant (Muller et al., 2005), indicating that the interaction effects of attention focus and interpretive framing on self-rating is partially mediated by ratings of the idealized model images.

### Study 3

Study 3 has two objectives. First, it builds and extends the findings of the prior two studies by examining the impact of blatant vs. subtle exposure to idealized slim body images on evaluations of brands endorsed in the communications containing these ideal images. Second, both Studies 1 and 2 used explicit task instructions to manipulate blatant vs. subtle exposure. Study 3 uses an externally valid manipulation of blatant vs. subtle exposure by varying the placement of idealized images in a marketing communication context. In Study 3, we show that consistent with our theorizing, when consumers are blatantly exposed to idealized images (vs. subtly exposed) in marketing communications, they are more

likely to use a defensive coping strategy to boost self-evaluation by denigrating the idealized images. Moreover, in this study we show that this defensive coping through denigration of the endorsing model with the idealized slim body image, can negatively affect the products these models endorse, through the transfer of the negative evaluation of the model to the endorsed product. However, when subtly exposed to idealized images, consumers do not engage in defensive coping by denigrating the idealized images. This leads to a negative self-evaluation, but does not interfere with their evaluations of the models, as shown in Study 2. Thus, the generally positive evaluation of the idealized image of the endorsing model affects the evaluations of the endorsed products favorably (Micu, Coulter, & Price, 2009).

#### Design and procedure

Participants recruited from Amazon Mechanical Turk were informed that they would take part in three independent tasks. The first task was the evaluation of a website designed for students: [www.Businessstudentstoday.com](http://www.Businessstudentstoday.com). On clicking the link, participants were presented with a web article that had a vodka advertisement embedded in it, which that varied across conditions. After reviewing the sample website, participants completed a short questionnaire about the article and embedded ad. Among the filler items, participants' evaluation of the aesthetic qualities of the web site, such as its color and line spacing, were the key dependent measure and the manipulation check measures. For the key dependent measure participants were asked to evaluate the vodka brand along four items anchored by bad/good, negative/positive, dislike/like, unfavorable/favorable ( $\alpha = .84$ ), along a seven-point scale. Three items that measured whether participants paid attention to the web article, the vodka advertisement, and the female endorsers in the vodka ad (measured in -blatant and subtle conditions, not in the control condition), along seven-point Likert scales anchored by "1" meaning "very little attention" and "7" "a great deal of attention," served as the manipulation check.

Next, participants were presented with a second task, A Lifestyle Survey, in which the same items of the Body Esteem Scale were embedded, as in Studies 1 and 2 (weight subscale  $\alpha = .90$ ; sexual attractiveness subscale  $\alpha = .89$ ; physical condition subscale  $\alpha = .91$ ). Finally, participants completed an impression formation task, where they were asked to evaluate the typical female that they encounter in their social life along the same 11 personality traits that were used in Study 2 and the 11 personality rating items were later averaged to create the rating of others ( $\alpha = .93$ ). The

**Table 1**  
Study 2 results and mediated moderation test: summary of regressions for mediated moderation test ( $N = 110$ ).

Predictors	Eq. (1) criterion BES_weight			Eq. (2) criterion model rating			Eq. (3) criterion BES_weight		
	$B$	$SE B$	$\beta$	$B$	$SE B$	$\beta$	$B$	$SE B$	$\beta$
$X$ attention focus (1, blatant, 0 subtle, centered)	.44	.23	.18	-.32	.34	-.09	.46	.24	.19
$Mo$ contextual cue (1, idealizing, 0, denigrating, centered)	.01	.23	.002	-.02	.34	-.01	.01	.24	.02
$XMo$ interaction	1.47	.47	<b>.29**</b>	-1.77	.67	<b>-.25*</b>	1.50	.49	<b>.30*</b>
$Me$ model rating (centered)							-.75	.22	<b>-.44**</b>
$MeMo$ interaction							.04	.14	.03
<b>R square</b>	<b>.14***</b>			<b>.10*</b>			<b>.26**</b>		

$X$  = manipulation,  $Mo$  = moderator,  $Me$  = mediator.

$X$  (attention focus) and  $Mo$  (contextual cue) must be independent (correlation = .07, NS).

$X$ ,  $Mo$ ,  $Me$  are all centered by the mean. The interaction term is the product of the centered independent variables (Irwin & McClelland, 2001).

Bold indicates betas needed to be significant to qualify for a mediated moderation.

$XMo$  Interaction in Eq. (3) is significant, indicating a partial mediated moderation.

Muller, Judd, and Yzerbyt (2005).

\*  $p \leq .05$ .

\*\*  $p \leq .01$ .

\*\*\*  $p \leq .001$ .

ratings of their peers are intended to measure defensive coping, and is taken from Critcher, Dunning, and Armor (2010). The same probe question identical to Studies 1 and 2 was included at the end of the experiment to detect demand. None of the participants were suspicious of the link between “separate” experiments.

#### Web study and embedded ad

Before reading the article, participants were instructed to review the web article and the advertisement embedded in the article, and to determine whether they would be a good fit for the website. The content of the article was identical across participants; it discussed the introduction of the Heineken Green Room program in Canada. Participants received one of three versions of an advertisement for an unfamiliar vodka brand U'Luvka. Two versions of the advertisements contained the picture of two women with idealized body images and a picture of the vodka bottle. In one of the two versions, the pictures of the models appeared directly on either side of the picture of the vodka bottle, and the combination was placed in the center of the webpage (blatant exposure). In the other version, the picture of the two models appeared on the left side of the webpage and the image of the vodka bottle on the right hand side of the page (subtle exposure). In the control condition, only the vodka bottle appeared in the advertisement, located in the center of the webpage.

One hundred and two female Caucasian participants were recruited from Amazon's Mechanical Turk ([www.mturk.com](http://www.mturk.com)), which is a reputable marketplace for online research (Buhrmester, Kwang, & Gosling, 2011; Xu & Wyer, 2011). Participants were resident in the North America at the time of participation, with an average age of 29. Participants were randomly assigned to one of the three web article conditions (control vs. blatant exposure vs. subtle exposure). Their responses to questions measuring attitude toward the vodka brand U'Luvka (in the embedded web ad), Body Esteem Scale, and defense mechanism were analyzed using analyses of variance.

#### Results and discussion

##### Manipulation checks

The three items that measured whether participants paid attention to the web article, the vodka advertisement, and the female endorsers in the vodka ad (measured in blatant and subtle conditions, not in the control condition) were analyzed using individual ANOVAs, with mode of exposure as the independent variable. The results revealed that as expected there was a significant effect ( $F_{(1,100)} = 6.09, p < .01$ ) for attention paid to the idealized images, indicating that participants paid more attention to the idealized images in the blatant exposure condition than in the subtle exposure condition ( $M_{\text{blatant}} = 5.39$  vs.  $M_{\text{subtle}} = 4.23$ ). Also as expected there was no significant effect for attention to the web article ( $F < 1$ ) or the vodka ad ( $F_{(2,100)} = 1.56, p > .10$ ).

##### Body Esteem Scale

A mixed-model ANOVA with mode of exposure (blatant, subtle, and control) as the between-participant factor and BES subscales as the within-participant factor revealed a two-way interaction ( $F_{(2,100)} = 6.84; p < .01$ ). To probe the interaction, we ran three separate ANOVAs with mode of exposure on the BES weight subscale, physical condition subscale and sexual attractiveness subscale. Consistent with previous studies, the main effect of mode of exposure was significant only for the BES weight subscale ( $F_{(2,100)} = 14.09, p < .001$ ) (Fig. 2a), but not on the physical condition and sexual attractiveness BES subscales ( $F_s < 1$ ).

As expected, blatant exposure made participants report higher ratings than subtle exposure ( $M_{\text{blatant}} = 3.39$  vs.  $M_{\text{subtle}} = 2.28, t = 5.41, p < .001$ ). Additional contrasts indicated that participants

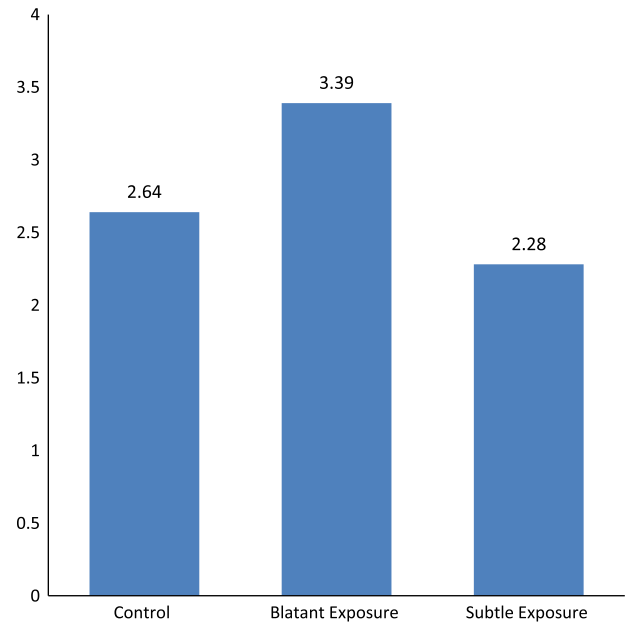


Fig. 2a. Study 3: effect of mode of exposure on BES weight sub-scale.

rated themselves more positively in the blatant condition than in the control condition ( $M_{\text{blatant}} = 3.39$  vs.  $M_{\text{control}} = 2.64, t = 3.45, p < .01$ ); participants in the subtle exposure condition rated their BES weight subscale marginally more negatively than in the control condition ( $M_{\text{subtle}} = 2.28$  vs.  $M_{\text{control}} = 2.64, t = -1.68, p < .10$ ).

##### Attitude toward the vodka brand

A one-way ANOVA yielded a significant main effect of mode of exposure on attitude toward the brand ( $F_{(2,100)} = 7.91, p < .001$ ) (Fig. 2c). As expected, due to conscious defensive reactions to the associated idealized images, participants rated the brand more negatively in the blatant (vs. subtle) exposure condition ( $M_{\text{blatant}} = 4.19$  vs.  $M_{\text{subtle}} = 5.35, t = -4.10, p < .01$ ). Additionally, and consistent with the hypothesized defensive reactions to the idealized images, contrasts indicated that compared to the control condition, blatant exposure led to a more negative brand attitude

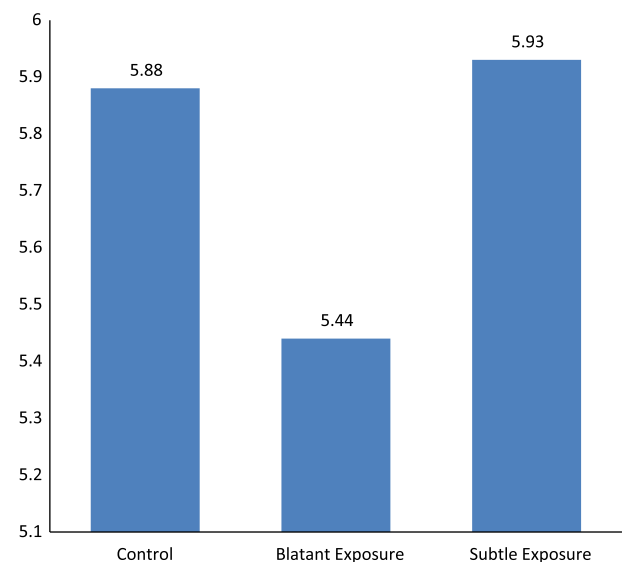


Fig. 2b. Study 3: effect of mode of exposure on other rating.

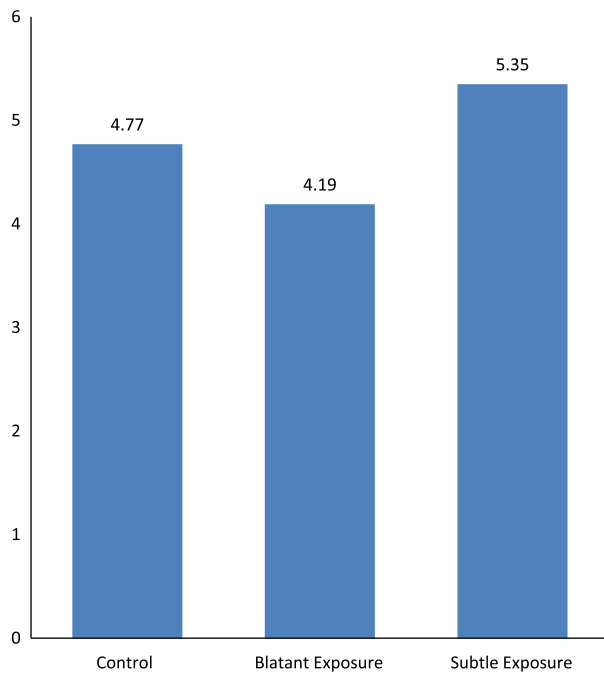


Fig. 2c. Study 3: effect of mode of exposure on attitude toward the brand.

( $M_{\text{blatant}} = 4.19$  vs.  $M_{\text{control}} = 4.77$ ,  $t = -1.98$ ,  $p < .05$ ). As well, due to the automatic upward social comparison triggered by the idealized images in the subtle exposure condition, participants reported a more positive brand attitude ( $M_{\text{subtle}} = 5.35$  vs.  $M_{\text{control}} = 4.77$ ,  $t = 2.13$ ,  $p < .05$ ), as we expected.

#### Others' rating

A one-way ANOVA yielded a significant main effect on the personality rating of others ( $F_{(2,100)} = 7.17$ ,  $p < .001$ ) (Fig. 2b). As expected, participants in the blatant exposure condition denigrated others compared to those in subtle exposure condition ( $M_{\text{blatant}} = 5.44$  vs.  $M_{\text{subtle}} = 5.93$ ,  $t = -2.71$ ,  $p < .01$ ). Additional contrasts established that participants in the control condition reported similar ratings of others, as in either the blatant or subtle exposure conditions ( $ts < 1.4$ ,  $ps > .10$ ).

#### Mediation

We first examined the role of defensive denigration as a mediator of the effects of mode of exposure on attitude toward the brand. Following Baron and Kenny (1986), mediation analyses indicated that mode of exposure had a significant and negative impact on attitude toward the brand ( $b = -.84$ ,  $SE = .25$ ,  $t = 3.37$ ,  $p < .01$ ), and when ratings of others, which served as a measure of denigration, were entered as a mediator, the effect size of mode of exposure dropped ( $b = -.68$ ,  $SE = .27$ ,  $t = 2.69$ ,  $p < .05$ ) but remained significant. A Sobel test ( $z = 2.37$ ,  $p < .05$ ) confirmed that defensive coping through denigration, measured by ratings of others, partially mediated the effect of mode of exposure on the attitude toward the brand (Fig. 3). In a second mediation analyses we examined whether self-image also mediated the effect of exposure mode on brand attitude. The analyses, as expected, revealed that it did not. When ratings of the BES weight subscale were entered into the regression predicting attitude toward the brand, the effect was not significant ( $b = .29$ ,  $SE = .24$ ,  $t < 1$ ).

We performed a final mediation analysis to examine whether the impact of mode of exposure on self-evaluations is mediated by defensive denigration. The analysis indicated that mode of exposure had a significant and positive impact on self-ratings

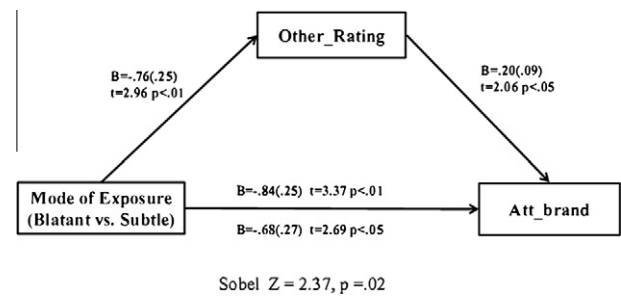


Fig. 3. Study 3: the mediating role of other rating in the relationship between mode of exposure and attitude toward the brand.

( $b = .95$ ,  $SE = .18$ ,  $t = 5.22$ ,  $p < .001$ ), and when ratings of others were entered as a mediator, the effect size of mode of exposure on the BES weight subscale dropped ( $b = .51$ ,  $SE = .14$ ,  $t = 3.56$ ,  $p < .01$ ), but remained significant. A Sobel test ( $z = 3.05$ ,  $p < .01$ ) indicated that defensive coping partially mediated the effect of mode of exposure on self-rating. This finding is consistent with our theorizing and the findings in Study 2.

#### General discussion

Prior research on the effects of idealized body images shows contradictory findings. Some have found the effect of idealized images on consumers' self-perceptions to be positive (e.g., Mills et al., 2002; Myers & Biocca, 1992), while others have found it to be negative (e.g., Richins, 1991; Grabe, Ward and Hyde, 2008; Harrison, 2000). The research on the effects of idealized images in advertisements on product evaluation is also mixed—idealized images in advertisements can create positive affect leading to the liking of the products or advertisements using attractive endorsers (e.g., Micu, Coulter, & Price, 2009) or can lead to negative product or advertisement evaluations due to consumers' negative reactions toward the attractive endorsers (Bower, 2001). Importantly, the relationship between self-perceptions and evaluations of products and advertisements employing idealized images remains understudied. Our research sought to understand the relationship between exposure to idealized images, self-perception, and evaluation of products endorsed by models with idealized body images, and to explain some of the inconsistencies in the past research.

We identified mode of exposure as an important boundary condition of the positive and negative effects of idealized body images on self-perception. We theorized and showed that when exposure to idealized images is subtle, an automatic process of upward social comparison takes place, leading to a negative self-rating. We theorized and showed that when exposure to idealized images is blatant, a conscious process is activated and consumers employ defensive coping by denigrating the idealized images to restore positive self-views, creating a positive self-rating.

Finally, we showed that when the idealized images are denigrated, on the one hand, self-image becomes more positive and, on the other, brands endorsed by the denigrated endorser become rated more negatively. When exposure is subtle and defensive coping through denigration is not activated, self-image is compromised by exposure to idealized images, but endorsed brands are evaluated positively, as our theorizing would suggest. Our research thus contributes to theory by identifying mode of exposure as a critical contingency that explains some of the inconsistencies in past research.

Our research also has important managerial implications. Employment of idealized images in marketing communications



can be harmful to product evaluations if consumers pay active attention to idealized body images in marketing communications. Given that the issue of the thin female ideal and its use in marketing communications has been an active cultural discourse for female consumers, female consumers today are perhaps more sensitive to the use of such images in marketing communications, pay attention to them, and react negatively. Marketers have seemingly become sensitive to this and it may account for recent campaigns such as Unilever's Real Beauty campaign for Dove, featuring full figured women. To successfully use idealized images in marketing communications, they should be presented subtly.

Either by design or serendipity, this occurs frequently enough. As we noted in our opening paragraph, advertising for Skyy vodka uses advertising where the idealized female models appear on one side of a magazine page, with the image of the brand on the other side of the page, this presentation format is more subtle and in fact inspired our Study 3 manipulation of exposure mode.

Last but not least, given that subtle exposure to idealized body images influences consumers without their conscious awareness, it suggests that public policy makers need to consider whether to intervene and regulate marketing communications that subtly present idealized body images.

Our research points to several potential fruitful directions for future research. Although our research focuses on defensive coping mechanisms in the form of denigration of the comparison target, prior research has documented alternative types of defensive coping mechanism when individuals are threatened. For example, when threatened, individuals can alter the importance of the threatened attribute to one's identity to restore self-worth (Tesser & Campbell, 1980), or dissociate themselves from one's group membership entirely when identity is threatened (Steele, 1997). Research also shows that the choice of coping mechanisms depends on factors such as individual difference, in particular in self-esteem. Thus, future research could explore the role of alternative coping mechanisms as well as the contingencies under which they are engaged.

In the current research we manipulated subtle presentation in marketing communications by placing the idealized images away from the product on a facing page. In the market place, a variety of subtle presentations exist; for instance, the way the female image appears on a Starbucks label or the female body shape of the bottle for Jean-Paul Gaultier's Classique line of perfumes. These subtle exposure methods may also boost product evaluations, and future research could examine whether they indeed do so.

**Acknowledgments**

The first author would like to acknowledge the research support of University of Manitoba/Social Science and Humanities Research Council (UM/SSHRC) and Social Science and Humanities Research Council of Canada (Grant Number 314275-322300-2000).

**Appendix A**

Sentences used in Study 1 for the Filler Task. Note that participants were only presented with the scrambled sentences. They were instructed to unscramble the sentence by eliminating one of the four scrambled words and rearranging the three remaining words to form a coherent sentence.

	Scrambled sentence	Solution
1	M. them crossed the street	M. crossed the street
2	T. lifted them bag the	T. lifted the bag

**Appendix A (continued)**

	Scrambled sentence	Solution
3	L. of the job did	L. did the job
4	T. answered the an phone	T. answered the phone
5	B. for a hoped it	B. hoped for it
6	S. has have the card	S. has the card
7	G. a gave gift are	G. gave a gift
8	K. dog the walked famine	K. walked the dog
9	B. our discussed the matter	B. discussed the matter
10	C. parent is a an	C. is a parent
11	G. has a inward family	G. has a family
12	J. of door opened the	J. opened the door
13	B. the did it easily	B. did it easily
14	D. guitar over wanted the	D. wanted the guitar
15	M. an saw a figure	M. saw a figure
16	R. the doubted off reason	R. doubted the reason
17	P. are idea the liked	P. liked the idea
18	G. got the a things	G. got the things
19	F. is enjoyed meal a	F. enjoyed a meal
20	N. heard for song a	N. heard a song
21	S. saw a either movie	S. saw a movie
22	D. ordered thus meal the	D. ordered the meal
23	R. read book by the	R. read the book
24	P. away it threw a	P. threw it away
25	M. again are will practice	M. will practice again
26	T. a last arrived at	T. arrived at last
27	J. thought an through it	J. thought it through
28	S. bought a ticket under	S. bought a ticket
29	B. can went class to	B. went to class
30	R. is out student a	R. is a student
31	G. the takes train am	G. takes the train
32	F. the test passed them	F. passed the test
33	D. often a comes over	D. often comes over
34	C. for prepared it of	C. prepared for it
35	J. so shin has a	J. has a shin
36	N. reached it for of	N. reached for it
37	P. an ball the threw	P. threw the ball
38	F. you spoke most of	F. spoke of you
39	C. under the sound heard	C. heard the sound
40	L marked before line the	L. marked the line
41	A. kissed where child the	A. kissed the child
42	K. reposed an it on	K. reposed on it
43	A. saw an the train	A. saw the train
44	N. locked four window the	N. locked the window
45	L. date thee set the	L. set the date

**Appendix B**

Sentences used in Study 2 as the contextual cues. Note that only the scrambled sentences were presented to participants. Participants were asked to solve the sentence by eliminating one word and rearranging the remaining four words to form a coherent phrase.

	Scrambled sentence	Solution
<i>Idealizing sentences</i>		
1	Weather <i>hot</i> was rain the	The weather was hot
2	They obedient him often meet	They meet him often
3	Vase <i>gorgeous</i> knocked where the	Knocked the gorgeous vase

(continued on next page)

## Appendix B (continued)

	Scrambled sentence	Solution
4	Ball the hoop toss normally	Toss the ball normally
5	Saw hammer he train the	He saw the train
6	The off gap <i>slim</i> was	The gap was slim
7	Maintain she to composure try	Try to maintain composure
8	Found occasionally offer the <i>attractive</i>	Found the offer attractive
9	The machine wash frequently clothes	Wash the clothes frequently
10	Guitar was play the <i>toned</i>	The guitar was toned
11	Did not the locked <i>fit</i> key	The key did not fit
12	Margins the write are <i>thin</i>	The margins are thin
13	The sky seamless grey is	The sky is grey
14	A have June holiday wedding	Have a June wedding
15	<i>Beautiful</i> music the ended was	The music was beautiful
<i>Denigrating sentences</i>		
1	Money rich <i>fake</i> the was	The money was fake
2	They obedient him often meet	They meet him often
3	Was <i>bony</i> swam the fish	The fish was bony
4	Ball the hoop toss normally	Toss the ball normally
5	Saw hammer he train the	He saw the train
6	Glass <i>frail</i> broke where the	Broke the frail glass
7	Maintain she to composure try	Try to maintain composure
8	<i>Scrawny</i> the climb tree is	The tree is scrawny
9	The machine wash frequently clothes	Wash the clothes frequently
10	A argument discussed made <i>weak</i>	Made a weak argument
11	Opened <i>plastic</i> bottle the drank	Opened the plastic bottle
12	Practiced the shot was <i>feeble</i>	The shot was feeble
13	The sky seamless grey is	The sky is grey
14	A have June holiday wedding	Have a June wedding
15	The barked <i>sickly</i> dog fed	Fed the sickly dog

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