Research report

The effect of images of thin and overweight body shapes on women’s ambivalence towards chocolate

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A B S T R A C T

Many women experience ambivalent orientations towards chocolate, both craving for it and having concerns about eating it. The present study investigated the effect of viewing thin and overweight images of models in chocolate advertisements on ambivalent attitudes. Participants were 84 females, aged 17–63, allocated to a thin model condition, an overweight model condition, or a control group. As predicted, following exposure to their respective images, participants in the thin condition had increased avoidance, approach and guilt scores, while participants in the overweight condition had decreased approach and guilt scores, with no change in avoidance. Control participants demonstrated ambivalence, but no changes over time. The findings show that common advertising strategies for chocolate are likely to exacerbate ambivalence in female consumers.

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Introduction

Ambivalence towards foodstuffs is widespread and has important implications for consumption and health-related behaviour. Motivational conflicts (“That looks and smells delicious, but it’s loaded with calories”, “They say it’s good for you – but it tastes like cardboard”) affect people’s experiences of food and impact on their dietary choices, as well as their readiness to respond to nutritional advice (Sparks, Conner, James, Shepherd, & Povey, 2001).

Chocolate is a prominent example of a foodstuff that evokes ambivalent responses. It is one of the most liked foods, with high proportions of people – especially women – reporting that they experience cravings for it (Rozin, Levine, & Stoess, 1991). Worldwide, the market for chocolate is enormous (Monotti, 2008) and chocolate is among the most advertised foodstuffs (Gunter, Oates, & Blades, 2005). Yet, accompanying the considerable sensory gratifications of chocolate are strong concerns about its potentially unhealthy nutritional properties, weight gain, and aversive feelings associated with over-indulgence (Benford & Gough, 2006; Rozin, Bauer, & Catanese, 2003). Women identify chocolate as prominent among components of their diet that they must reduce or omit if they wish to regulate their weight (Mooney, Farley, & Strugnell, 2009; Steenhuis, 2009). Thus, eating chocolate is associated with ambivalent attitudes and emotions: certainly, it invokes strong approach motives but people also profess strong intentions to avoid it, and report feeling guilty if they consume it. Importantly, these conflicting orientations can be experienced simultaneously (Rodríguez, Fernandez, Cepeda-Benito, & Vila, 2005).

Previous research with both children (Cartwright et al., 2007) and adults (Cartwright & Stritzke, 2008) has demonstrated that attitudes to chocolate can be distinguished into approach, avoidance and guilt components. In this study, we investigate the ways in which these ambivalent reactions vary in response to different kinds of visual images such as those typically employed in advertisements for chocolates, most notably presentations involving slender women.

Chocolate, advertising and ambivalence

Visual imagery provides one of the most potent techniques available to advertisers (Messaris, 1997). Research confirms that visual images of chocolate can be compelling, often evoking craving (Fletcher, Pine, Woodbridge, & Nash, 2007; Rodríguez et al., 2005; Rolls & McCabe, 2007). Visual images also offer a means of associating chocolate with other potent ideals, such as physical beauty, social status, glamour, excitement or comfort. For example, chocolate advertisements often include models exemplifying an idealised female form favoured in contemporary mass media: unrealistically slender, facially beautiful and with flawless skin (Sypeck, Gray, & Ahrens, 2004). In real life, these attributes may not be an assured consequence of chocolate consumption but...
presumably advertisers seek to convey the implicit message that purchasing or eating this sweet is somehow conducive to enhanced physical attractiveness. In this way, advertisements for chocolate have the potential to exacerbate further the ambivalence associated with the product.

Research into female viewers' reactions to idealised beauty imagery in the media has yielded mixed findings (Mills, Polivy, Herman, & Tiggemann, 2002). Several investigators have reported negative impacts on body image. The desire to be thin remains a concern for many women throughout the lifespan (Tiggemann, 2002) and, for most, the thin ideal is biologically unrealistic and unattainable without dangerous dieting. Exposure to such models can lead to unfavourable social comparisons between self and ideal, which in turn can result in negative affect and body dissatisfaction (Dittmar, Halliwell, & Stirling, 2009; Grabe, Ward, & Hyde, 2008; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). However, some studies have found positive effects of exposure to thin ideal models, such as self-enhancement (Joshi, Herman, & Polivy, 2004; Mills et al., 2002) and others have obtained no significant effects (Champion & Furnham, 1999).

Some evidence suggests that exposure to thin models via the media is a risk factor associated with eating disorders (Levine & Murnen, 2009). Chocolate is often a particularly problematic food for women with eating disorders; it is linked with high rates of craving and can trigger episodes of binge eating (Turner, Luszczynska, Warner, & Schwarzar, 2010).

Fletcher et al. (2007) have demonstrated that chocolate ads can indeed impact on participants' feelings about chocolate. These investigators found that women exposed to visual images of chocolate had higher total scores on the Attitudes towards Chocolate Questionnaire (ACQ) (Benton, Greenfield, & Morgan, 1998) than did women in a control condition (exposed to images of perfume). The total score from the ACQ combines sub-scales of both craving and guilt. Hence, these findings suggest a generally heightened level of affective response to chocolate ads, which includes – simultaneously – positive and negative reactions.

Thus, the combination of chocolate and thin ideal imagery has the potential to excite conflicting motivational states in female viewers. Varied outcomes have been reported in the literature on body image effects following exposure to thin models, and little is known of the effects of thin models in the context of a tempting foodstuff. More direct evidence is needed of the relative strengths of approach, avoidance and guilt. Hence, these findings suggest a generally heightened level of affective response to chocolate ads, which includes – simultaneously – positive and negative reactions.

The present study

In a between-groups design, we tested women's orientations to chocolate before and after exposure to chocolate ads including thin or overweight female models, or a control (no exposure) condition. Because chocolate is a product of widespread appeal, we expected that participants in both exposure conditions should experience increased approach motives. We predicted that associating chocolate with images of thin female models would increase ambivalence in women's attitudes to the product itself. That is, we expected that each of approach, avoidance and guilt scores to increase in this condition. Approach scores should increase because visual images of chocolate are typically intended to promote approach motives (Fletcher et al., 2007), and because the thin body ideal is attractive to many young women (Levine & Murnen, 2009). Avoidance scores should increase because viewing idealised thin female images can provoke body dissatisfaction due to perceived discrepancy with the self-image (Dittmar et al., 2009; Posovac, Posovac, & Posovac, 1998), and because women recognise that the high fat and sugar content of chocolate is not conducive to achieving or maintaining a slim figure (Rozin et al., 2003). Thus, chocolate ads with thin models should provoke conflicting, simultaneous, increases in approach and avoidance motives. In effect, the viewer is reminded that 'Chocolate is naughty but nice'. In this condition, there is a tension between desire and restraint and the participant is potentially reminded that giving in to one's vulnerability to chocolate could undermine the prospects of matching the idealised thin body image. Hence, we predicted that the thin model condition should also increase feelings of guilt about chocolate.

Participants who were exposed to chocolate with overweight models were predicted also to experience attraction to the product (increased approach motives). However, exposure to overweight models in proximity to chocolate could exacerbate any concerns that female viewers have about the effects of eating it. These advertisements provide visible reminders that the product is indulgent and weight-increasing. Being considered 'fat' is something that most contemporary Western females would prefer to avoid (Cash & Hicks, 1990; Dalley, Buunk, & Umit, 2009). On this basis, then, we predicted that exposure to chocolate in association with overweight models should also heighten avoidance responses. On the other hand, participants in this condition might have less reason to feel guilty about their interests in the product. Social comparison with the overweight models is not so threatening to the self-image, and evidence suggests that exposure to overweight models results in decreased body dissatisfaction and less disordered eating in female viewers (Irving, 1990; Ogden & Mundray, 1996). Hence, in this condition, we predicted increases in approach and avoidance scores but a reduction in guilt.

Method

Participants

Eighty-four women were recruited from two workplaces: an administration office and a call centre in a large UK city. Participants ranged in age from 17 to 63 years (M = 35, SD = 13.56). Their mean BMI was 23.41, SD = 3.80.

Design

Participants were allocated randomly to one of three groups: two exposure conditions (images of chocolate with either thin models or overweight models), and a control condition (no exposure). There were 28 participants in each condition. Groups did not differ significantly in age or BMI. All participants completed the Orientation to Chocolate Questionnaire (Cartwright et al., 2007) pre- and post-exposure.

Materials

Orientation to Chocolate Questionnaire (OCQ; Cartwright & Stritzke, 2008; Cartwright et al., 2007)

The OCQ measures three components associated with chocolate craving: approach (6 items; example: 'I wanted to eat chocolate as soon as I had the chance'), avoidance (2 items; example: 'I deliberately occupied myself so I would not want chocolate') and guilt (6 items; example: 'I felt guilty after eating chocolate'). Cronbach's alphas for the present sample ranged from .80 to .91.

The Consumer Questionnaire

This questionnaire contained 45 items, which included the 14 item OCQ and consumer-type items on cars (15 items), mobile
phones (12 items) and chocolate (4 items). All of the consumer items were intended to enhance the credibility of the cover story that this was a study about reactions to advertised products. Participants recorded the extent of their agreement with each item on a scale ranging from 1 (‘not at all’) to 9 (‘very strongly’).

Advertising evaluation task

Participants received a set of three advertising evaluation tasks (cars, chocolate, mobile phones) in which nine pictorial advertisements for a product were presented. Each task was headed “Right product, right slogan, right image”. The rationale provided to participants was that they were being asked to help decide which pictures most effectively advertised the product. There were two versions of the chocolate task, one presenting only thin ideal models, and one presenting only overweight models. Participants were instructed to give each of the images a score, with 1 being ‘least effective’ and 9 being ‘most effective’. The car and mobile phone tasks were distracter tasks.

Advertisements

Chocolate advertisements for the advertisement evaluation task were obtained from the Internet. Nine images containing young women depicting the current slim ideal were selected. One woman appeared in each ad, together with a chocolate product. No product names were included.

Because images of overweight models with chocolate were more difficult to find, we composed our own advertisements, using digital editing to merge pictures of overweight females with images of chocolate (e.g., an attractive, large woman beside a box of chocolates). Structurally, these illustrations were similar to those in the slim condition. To minimise any confound of condition with perceived attractiveness, we selected women in a comparable age range whom we judged to be facially attractive. An initial set of 18 composed images was then presented to a convenience sample of 10 females who were asked to rate the attractiveness of each model on a scale of 1 (‘very unattractive’) to 10 (‘very attractive’). The nine images with the highest attractiveness scores (>8) were chosen for the task.

Images for the car and mobile phone distracter tasks were also obtained from the Internet. None of these images contained photographs of females.

Procedure

The study was conducted over two sessions, 1 week apart, each lasting approximately 10 min. Participants were told that the study was an examination of attitudes and opinions in relation to advertising popular consumer products. The Consumer Questionnaire (containing the OCQ among the distracter items) was then completed.

During the second session, participants were given a set of three advertising evaluation tasks (cars, chocolate, mobile phones) in which nine pictorial advertisements for each product were presented. Each task was headed “Right product, right slogan, right image”. The car advertisements were completed first. Participants were instructed to give each of the nine car advertisement images a score, with 1 being ‘least effective’ and 9 being ‘most effective’. The chocolate task was then completed. Participants were presented with nine images of either overweight or thin females with chocolate, depending on the condition. They were asked to evaluate the effectiveness of each advertisement, again using the scale from 1 to 9. A similar task was completed for advertisements of mobile phones. The purpose of the tasks was to ensure that participants attended to the images. The Consumer Questionnaire was completed after the advertisement evaluation tasks.

Results

The mean scores (and SDs) for approach, avoidance and guilt by condition and time (pre- versus post-exposure to the chocolate advertisements) are presented in Table 1.

Approach scores were submitted to a 3 (Condition: Thin model, Overweight model, Control) × 2 (Time: Pre- versus post-exposure) analysis of variance, with the latter factor as a repeated measure. Neither main effect was significant, but there was a Condition × Time interaction, F(2, 81) = 15.43, p < .001, partial $\eta^2$ = .28. In the thin condition, approach scores increased post-exposure, t(27) = −2.95, p < .01, whereas in the overweight condition they decreased post-exposure, t(27) = 4.01, p < .001. There was no significant difference in the control condition (p > .1).

Avoidance scores were submitted to a 3 (Condition) × 2 (Time) ANOVA, as above. There was a main effect of condition, F(1, 81) = 3.56, p < .05, partial $\eta^2$ = .08, which was qualified by a Condition × Time interaction, F(2, 81) = 4.98, p < .01, partial $\eta^2$ = .11. In the thin condition, avoidance scores increased post-exposure, t(27) = −3.31, p < .01, whereas there were no significant changes in the other conditions, ts < .7, ps > .8.

With regard to guilt scores, a 3 (Condition) × 2 (Time) ANOVA yielded a Condition × Time interaction, F(2, 80) = 11.96, p < .001, partial $\eta^2$ = .23. In the thin condition, guilt scores increased post-exposure, t(27) = −2.96, p < .01, whereas in the overweight condition guilt scores decreased post-exposure, t(26) = 2.84, p < .01. There was no significant change in the control condition (p > .2).

Discussion

Presenting images of chocolate with thin models promotes ambivalence: approach, avoidance and guilt responses were all increased in this condition, compared to the participants’ pre-exposure responses. In contrast, presenting chocolate with overweight models led to decreases in approach and in guilt (with no change on avoidance). As expected, control participants (not exposed to the ads) showed no changes on any measure.

As indicated by numerous studies of the impact of thin models on female audiences, this imagery is potent and the present findings indicate that it can increase the attractiveness of a product, consistent with previous research on food intake following exposure (e.g., Anschutz, Engels, Becker, & van Strien, 2008; Mills et al., 2002; Monro & Huon, 2006; Strauss, Doyle, & Kreipe, 1994). However, participants in this condition also experienced an increase in avoidance scores. It has been argued that exposure to the thin ideal can be aversive for many women, because it invokes uncomfortable social comparisons (Dittmar et al., 2009; Levine & Murnen, 2009). Consistent with this interpretation, women in the thin condition also recorded increases in guilt post-exposure.

In contrast, participants in the overweight condition showed a decrease in approach scores following exposure to their advertisements. It appears that, by making weight gain salient, these images diminish desire to eat chocolate, at least in the short term. Thus, rather than the expected increase in avoidance in response to overweight images, there was only a decrease in approach. It may be that the risk of weight gain is already factored into women’s reasoning about chocolate, and visible reminders of this possibility are not necessary for prompting avoidance reactions. Guilt decreased in this condition post-exposure. One possibility is that participants did not experience unfavourable social comparisons and may even have found it reassuring to observe large women. Ogden and Mundry (1996) and Irving (1990) found that females have increased body satisfaction after viewing overweight images. Taken together, the results for this condition suggest that images of over-
weight and attractive models were not perceived by participants as unpleasant but simply cautionary, given that most contemporary women would prefer not to be fat (Cash & Hicks, 1990; Dalley et al., 2009). Further research is needed to test whether social cognitive processes, such as social comparison and altered perception of one’s own body image, do mediate responses to the kinds of images used in this experiment.

One of the strengths of this study is that it used a wide age range of participants and drew them from the general public. However, some limitations should be acknowledged. We did not include an additional control condition in which participants viewed images of chocolate only (i.e., with no models). Previous research has established that visual images of chocolate do impact on motivational reactions to the product (Fletcher et al., 2007; Rolls & McCabe, 2007), and our focus here was on how different contexts may affect responses to this appealing foodstuff; nevertheless, future research could usefully distinguish between the effects of chocolate-alone and chocolate-plus-model.

A second limitation is that we did not control statistically for participants’ level of dietary restraint. Previous research indicates that reactions to images of food, and in particular images of thin/not thin models, differ between females who exhibit dietary restraint and those who do not (e.g., Anschutz et al., 2008; Fletcher et al., 2007; Halliwell, Dittmar, & Howe, 2005; Mills et al., 2002). It is possible that the effects of exposure to thin models advertising chocolate are more pronounced among dieters.

The present study also lacked a measure of behavioural effects, such as consumption or taste. We take our findings with respect to motives to suggest that females exposed to the thin model condition should be more likely to purchase or eat chocolate if available after viewing, though this may be moderated by dietary restraint and/or weight (cf. Mills et al., 2002). These possibilities remain to be tested.

The present findings have implications for our understanding of the factors influencing eating disorders, for treatment, and for advertisers. We have found that exposure to stereotypical ads with images of thin models and sensuous chocolate stimulate ambivalent reactions in women – promoting increases in approach, avoidance and guilt. Although not directly tested here, it is possible that these conflicting responses may in turn contribute to the genesis of eating disorders in vulnerable adolescents and young women (cf. Cartwright et al., 2007; Hetherington & MacDiarmid, 1993; Levine & Murnen, 2009). From a clinical perspective, our findings suggest that associating chocolate with images of larger models can decrease approach and decrease guilt. From the perspective of advertisers, our findings indicate that the use of thin models can increase approach/craving but also increase avoidance and guilt. Hence, advertisers’ current strategies may contribute effectively to the presumably dominant goal of selling their product, though potentially at some cost to their consumers’ psychological wellbeing and at the risk of sustaining ambivalence rather than wholehearted endorsement. Using large female models would not be a propitious strategy for those who wish to sell vast amounts of chocolate, though it remains to be determined whether use of attractive but regular sized models could achieve a satisfactory balance between commercial goals and customer wellbeing.

References


Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Thin model</th>
<th>Overweight model</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Approach</td>
<td>4.15 (1.86)</td>
<td>5.20 (2.00)</td>
<td>4.02 (1.84)</td>
<td>3.08 (1.68)</td>
</tr>
<tr>
<td>Avoidance</td>
<td>3.32 (2.04)</td>
<td>4.14 (2.41)</td>
<td>2.43 (1.66)</td>
<td>2.38 (1.93)</td>
</tr>
<tr>
<td>Guilt</td>
<td>4.08 (1.77)</td>
<td>4.89 (2.01)</td>
<td>3.90 (1.80)</td>
<td>3.05 (1.72)</td>
</tr>
</tbody>
</table>

Notes: Each scale ranged from 1 to 9.

* = Significant change from pre- to post-exposure, p < .01.


