

# The effect of digital alteration disclaimer labels on social comparison and body image: Instructions and individual differences

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### **Abstract**

The current study aimed to investigate the effect of digital alteration disclaimer labels appended to fashion magazine advertisements, as well as instructional condition, on women's social comparison and body dissatisfaction. Participants were 378 female undergraduate students who viewed 11 thin ideal advertisements with either no disclaimer, a generic disclaimer, or a more detailed specific disclaimer. There were three instructional conditions: neutral, distractor, and social comparison. Disclaimer labels did not affect appearance comparison or body dissatisfaction, but instructional condition did, with the social comparison instructions producing the highest appearance comparison and body dissatisfaction. In addition, there was a three-way interaction with trait appearance comparison, such that women high on trait appearance comparison who saw specifically worded disclaimers in the distractor instructional condition experienced increased body dissatisfaction, whereas women low on this trait experienced decreased body dissatisfaction. It seems that both instructions and individual differences may influence responses to disclaimer labels.

**Keywords:** disclaimer labels, media, fashion magazine advertisements, social comparison, body dissatisfaction.

It has now been well established that exposure to thin idealised media images can impact negatively on women's body image (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Levine & Murnen, 2009; Want, 2009). These negative effects happen particularly for more vulnerable women, that is, for those who have internalised the thin ideal to a greater extent (Dittmar & Howard, 2004; Grabe et al., 2008; Groesz et al., 2002; Heinberg & Thompson, 1995; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005) or for whom appearance is important to their self-concept (Dittmar & Howard, 2004; Halliwell & Dittmar, 2005). Negative body image, in particular body dissatisfaction, has been found to be associated with increased risk of depression, low self-esteem, and eating disorders (Dittmar, 2009; Posavac, Posavac, & Weigel, 2001; Stice, Schupak-Neuberg, Shaw, & Stein, 1994). Thus, the impact of thin ideal media imagery has become an important societal concern.

In an attempt to reduce negative effects due to exposure to thin ideal media imagery, in 2009 the Australian National Advisory Group on Body Image introduced the Voluntary Code of Conduct which targeted the fashion, media and advertising industries (Krawitz, 2014). One recommendation under this Code was that a disclaimer of digital alteration should be attached to any image that has been digitally altered. Since the above Code was introduced, Israel passed a law in 2012 requiring the advertising industry to disclose when images of models have been digitally enhanced (Geuss, 2012; Krawitz, 2014). Then, in April 2015, legislation was approved by the French lower house requiring advertisements to carry disclaimers if images have been digitally altered. This legislation will need to be approved by the upper house to become law (Charlton, 2015).

Disclaimers of digital alteration appended to fashion magazine or billboard advertisements are appealing and attractive to policy makers and governments because they are easy and relatively cheap to implement. However, before a strategy is implemented widely in society, there needs to be evidence of its effectiveness. More generally, media

literacy programs which include a discussion of digital enhancement (models made thinner, removal of wrinkles and blemishes) have shown some promise in encouraging women to become more critical of media images (Halliwell, Easun, & Harcourt, 2011; Ogden & Sherwood, 2008; Posavac et al., 2001; Yamamiya et al., 2005). Thus, it seems plausible that disclaimer labels indicating digital alteration might encourage women to be more critical of the unrealistic thin ideal images presented in fashion magazines. Based on the logic that negative body image results from comparisons with unrealistic thin ideal media images (Festinger, 1954; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Want, 2009), it is reasoned that a disclaimer label would highlight a model's appearance as unrealistic and inappropriate as a comparison target. The disclaimer label would thereby reduce social comparison on the basis of appearance, and thus preserve body satisfaction (Tiggemann, Slater, Bury, Hawkins, & Firth, 2013).

However, despite this plausibility, the existing research has produced mixed findings. Thus far, only one study by Slater, Tiggemann, Firth, and Hawkins (2012) has found that disclaimer labels attached to fashion shoots were able to reduce body dissatisfaction. However, studies which have investigated the use of disclaimer labels on fashion magazine advertisements have found no such benefit (Ata, Thompson, & Small, 2013; Bury, Tiggemann, & Slater, 2015; Tiggemann et al., 2013). In fact, one form of disclaimer label has been found to exacerbate negative effects for some women. In particular, for women high on trait appearance comparison, disclaimer labels which specified the body areas that had been digitally altered led to increased body dissatisfaction (Tiggemann et al., 2013).

One possible reason why the previous studies found no reduction in body dissatisfaction is that the disclaimer labels may not in fact have reduced social comparison. Indeed, in their first experiment, Tiggemann et al. (2013) reported significantly higher appearance comparison for women who saw disclaimer labels, with no difference in their

second experiment. In addition, one eye-tracking study has shown that specifically worded disclaimer labels directed more, rather than less, visual attention toward body areas mentioned as digitally altered (Bury, Tiggemann, & Slater, 2014).

Comparisons on the basis of appearance can be made consciously, but alternatively, they can be unintentional and automatic (Bessenoff, 2006; Gilbert, Giesler, & Morris, 1995; Want, 2009). It has been suggested that women may only consider the relevance or appropriateness of such comparisons after they have already been made, and may then attempt to “undo” them if the situation, their cognitive engagement, and their level of motivation allow (Gilbert et al., 1995; Want, 2009). In all previous experimental investigations (Ata et al., 2013; Bury et al., 2015; Tiggemann et al., 2013) participants were requested to rate the advertisements on non-appearance qualities such as creativity, layout, and effectiveness. Thus, it is possible that the cognitive load involved in making these ratings inadvertently left participants with insufficient capacity to consciously undo any inappropriate comparisons (Gilbert et al., 1995; Want, 2009).

More generally, there is evidence that experimental instructions, and thus the type of information processing women engage in, can impact the effect of thin ideal exposure. In particular, it has been shown that social comparison instructions lead to increased appearance comparison processing and body dissatisfaction for women exposed to thin ideal advertisements (Cattarin, Thompson, Thomas, & Williams, 2000; Tiggemann & McGill, 2004; Tiggemann & Polivy, 2010; Tiggemann, Polivy, & Hargreaves, 2009). Accordingly, it is likely that experimental instructions might also affect how women process the information contained in digital alteration disclaimer labels, and consequently affect body image.

Thus, the major aim of the current study was to investigate in more detail the role of social comparison processing in determining the effectiveness of disclaimer labels affixed to fashion magazine advertisements, by not only measuring it, but by also manipulating

experimental instructions to induce greater or lesser amounts of social comparison processing. Participants viewed advertisements either without a disclaimer label, or with a generic disclaimer label indicating that the image had been digitally altered or specific disclaimer label which specified the body areas that had been altered. Based on the methodology of Tiggemann and McGill (2004), processing was manipulated via three different instructional conditions. In the neutral instructional condition, in order to reduce cognitive load participants were simply asked to view the advertisements. The other two instructional conditions imposed some cognitive load. In the distractor instructional condition, participants were asked to rate non-appearance qualities of the advertisements (as per Ata et al. (2013), Bury et al. (2015), and Tiggemann et al. (2013)). In the social comparison instructional condition, participants rated items that subtly encouraged comparison with the models in the advertisements.

Based on the reasoning that preventing or undoing appearance comparison requires cognitive effort, it was expected that instructional condition would interact with disclaimer label type in affecting both social appearance comparison and body dissatisfaction. In particular, in the neutral instructional condition where participants were not required to rate the advertisements, it was anticipated that the disclaimer labels would be effective in reducing social comparison and body dissatisfaction. That is, when participants were not made cognitively busy assessing non-appearance qualities of the advertisements, they would retain the cognitive resources necessary to mentally undo (inappropriate) comparisons with the unrealistic thin ideal images. However, for participants in the distractor instructional condition, it was expected that results would replicate those of the previous studies in which disclaimer labels have not proved effective in reducing body dissatisfaction (Ata et al., 2013; Bury et al., 2015; Tiggemann et al., 2013). This same pattern was expected for the social

comparison instructional condition, with both appearance comparison and body dissatisfaction expected to be highest for participants in this condition.

Finally, the effect of individual differences in trait levels of social comparison was assessed. Trait appearance comparison was expected to moderate the effect of disclaimer label type on body dissatisfaction, as has been found in previous research (Tiggemann et al. 2013). More precisely, it was expected that specifically worded disclaimer labels would be least effective for women with a greater tendency to compare on the basis of appearance, as these women may be more cognitively primed to attend to any information related to appearance (Yamamiya et al., 2005), and also may be less motivated to avoid such comparisons (Want, 2009).

## **Method**

### **Design**

The experiment employed a 3 x 3 between-subjects design, with three levels of both independent variables: disclaimer label (no label, generic, specific) and instructional condition (neutral, distractor, comparison). The major dependent variables were state appearance comparison and body dissatisfaction. Trait tendency for appearance comparison was examined as a potential moderating variable.

### **Participants**

Participants were 378 female undergraduate students at a South Australian university who reported that English was their first language. Age ranged from 18 to 30 years, with a mean age of 20.1 years ( $SD = 2.9$ ). The average body mass index of 22.8 ( $SD = 4.4$ ) fell within the normal weight range (World Health Organisation, 2011). The majority of participants identified as White (82.5%), with 14.8% Asian, and 2.7% 'other'.

## Materials

**Thin ideal stimuli.** The stimuli consisted of 11 thin ideal advertisements (plus four product only advertisements) sourced from popular women's fashion magazines readily available in Australia, including *Cleo*, *Marie Claire*, and *Vogue*. The 15 advertisements were all for fashion related items, such as clothes, accessories, and perfume. They were chosen from an initial pool of 50 advertisements (30 thin ideal, 20 product only) to represent a typical fashion magazine collection, having been rated by a small panel of raters ( $N = 7$ ) as glossy, attractive, colourful, and having general appeal. Each advertisement satisfied the following criteria: only one female model, the model represented the thin ideal, at least three quarters of the model's body was visible, the model was not a well-known celebrity, and the advertisement did not refer to weight loss.

The advertisements were printed on high quality A4-size photographic paper and presented in a folder to imitate the layout of a fashion magazine. Three different versions of each thin ideal advertisement were constructed. These included the original advertisement with no disclaimer label, the same advertisement with a generic disclaimer label added using *Adobe Photoshop*, and the advertisement with a specifically worded disclaimer label. In the generic disclaimer label condition, the label read "Warning: This image has been digitally altered". In the specific disclaimer label condition, the disclaimer label specified particular body areas that had been altered, tailored for each advertisement, e.g., "Warning: This image has been digitally altered to lengthen and thin legs". Disclaimer labels were positioned in the corner that best suited the individual layout of the advertisement to ensure that the label was clearly visible. Labels were printed in size 12 Calibri font enclosed within a thin border, and were similar in size to those previously used by Ata et al. (2013) and Tiggemann et al. (2013). Previous research has demonstrated by manipulation check (Ata et al., 2013) and



analysis of eye movements (Bury et al., 2014) that participants do notice disclaimer labels of this size affixed to fashion magazine advertisements.

**Instructional condition.** There were three instructional conditions (neutral, distractor, comparison). In the neutral instructional condition, participants were asked to simply look at each advertisement. In both other conditions, participants were required to rate the advertisement in a ‘Consumer Response Questionnaire’. Based on the methodology of Tiggemann and McGill (2004), in the distractor instructional condition, participants were asked to indicate their agreement on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) with the following items: “If I saw this advertisement in a magazine, it would catch my eye”; “I like the layout of this advertisement”; “I find this advertisement interesting”; “This advertisement is creative”; and “Overall, this advertisement is effective”. In the social comparison instructional condition, the second, third and fourth items were replaced by the following: “I would like my body to look like this woman’s body”; “The woman in the advertisement is thinner than me”, and “In a busy clothes shop, I would not like to try on clothes in the same change-room as this woman”, with a “N/A” response option to accommodate the product only advertisements.

**State appearance comparison.** Three 7-point items constructed by Tiggemann and McGill (2004) were used to measure state appearance comparison retrospectively. The first item asked participants to rate the extent to which they thought about their appearance while viewing the advertisements (1 = *no thought about my appearance*, 7 = *a lot of thought*). The second and third items asked participants to what degree they compared their overall appearance and specific body parts to those of the models in the advertisements (1 = *no comparison*, 7 = *a lot of comparison*). Responses on the three items were averaged, such that a higher score represented greater appearance comparison. Tiggemann and McGill (2004) reported high internal reliability ( $\alpha = .91$ ), as was found in the current study ( $\alpha = .92$ ).

**Body dissatisfaction.** Following Heinberg and Thompson (1995), seven visual analogue scales (VAS) were used to obtain measures of mood and state body dissatisfaction, both before and immediately after viewing the 15 magazine advertisements. The five mood items (not analysed here) were included to mask the focus on body dissatisfaction. Each scale consisted of a 100mm continuous horizontal line with endpoints labelled “none” and “very much”. Participants were asked to make a small vertical mark along each line to indicate how they felt “right now” on the measures of anxiety, depression, happiness, anger, confidence, weight dissatisfaction, and appearance dissatisfaction. Responses were measured to the nearest millimetre (mm) from the “none” endpoint. A score for body dissatisfaction was calculated by averaging the VAS measures of ‘weight dissatisfaction’ and ‘appearance dissatisfaction’. Scores ranged from a possible 0 to 100, with a higher score indicating greater body dissatisfaction. Heinberg and Thompson (1995) reported good construct validity for the body dissatisfaction VAS in that they were strongly related to the Eating Disorders Inventory Body Dissatisfaction subscale (EDI-BD) (weight dissatisfaction,  $r = .66, p < .01$ ; appearance dissatisfaction,  $r = .76, p < .01$ ). In the current study, internal consistency was acceptable (pre-exposure  $\alpha = .79$ ; post-exposure  $\alpha = .88$ ).

**Trait tendency for appearance comparison.** The Physical Appearance Comparison Scale (PACS) of Thompson, Heinberg, and Tantleff (1991) was used to measure the trait tendency to engage in social comparison based on appearance. The five items (e.g., “At parties or other social events, I compare my physical appearance to the physical appearance of others”) were answered on a 5-point Likert-type scale (1 = *never*, 5 = *always*). Scores on the items were averaged to obtain overall trait tendency for appearance comparison, where a higher score represented a greater tendency. Internal reliability for this scale was acceptable ( $\alpha = .78$ ) when used by Thompson et al. (1991), as it was in the current study ( $\alpha = .74$ ).

## Procedure

Women aged 18 to 30 years with English as their first language were recruited for a study on the effectiveness of fashion magazine advertisements targeted at women. Before commencing, a letter of introduction was read and a consent form completed. Participants were randomly allocated to one of the nine experimental cells, subject to equal  $n$  ( $n = 42$ ) per condition. Participants then completed a brief questionnaire about their magazine and fashion consumption, and the pre-exposure VAS measures of mood and body dissatisfaction.

Next, participants were handed a folder containing the 15 advertisements. All the advertisements were in the same order. Participants viewed each advertisement for 45 seconds and answered the relevant questions (where applicable). Next participants completed the post-exposure VAS (mood, body dissatisfaction) and the measures of state appearance comparison and trait appearance comparison. Participants were then asked to provide their age and ethnicity, and with their consent, height and weight were measured to calculate body mass index. Finally, participants completed a general recall task of associated brands (not analysed) to support the purported aim of researching the effectiveness of fashion magazine advertisements targeted at women. Each session lasted approximately 30 minutes, and participants received course credit for their participation. Feedback was provided to the participants via an online system once data collection was complete.

## Results

### Sample Characteristics

The nine experimental groups did not differ in age,  $F(4, 369) = 1.03, p = .389, \eta_p^2 = .01$ , bmi,  $F(4, 369) = 1.53, p = .194, \eta_p^2 = .02$ , minutes spent looking at women's magazines in the last month,  $F(4, 369) = 0.38, p = .827, \eta_p^2 < .01$ , or hours spent shopping for fashion in the last month,  $F(4, 369) = 1.70, p = .150, \eta_p^2 = .02$ . In addition, pre-exposure body dissatisfaction did not differ across experimental groups,  $F(4, 369) = 1.63, p = .166, \eta_p^2 = .02$ ,

indicating that random assignment was successful. Importantly, participants across the nine experimental cells did not differ in level of trait appearance comparison,  $F(4, 369) = 0.33, p = .860, \eta_p^2 < .01$ , demonstrating that this construct was not reactive to the experimental manipulation.

### **Effect of Disclaimer Label and Instructional Condition on State Appearance**

#### **Comparison**

A 3 x 3 between-groups analysis of variance was conducted to analyse the impact of disclaimer label and instructional condition on state appearance comparison. As can be seen from the column total means in Table 1, the main effect for disclaimer label on state appearance comparison was not significant,  $F(2, 369) = 2.41, p = .091, \eta_p^2 = .01$ . In contrast, the main effect for instructional condition was significant,  $F(2, 369) = 27.94, p < .001, \eta_p^2 = .13$ . Post hoc comparisons confirmed that state appearance comparison was greater in the social comparison instructional condition than in the neutral instructional condition,  $p < .001$ , which was in turn greater than in the distractor instructional condition,  $p = .033$ . Finally, the interaction between disclaimer label and instructional condition was not statistically significant,  $F(4, 369) = 0.90, p = .462, \eta_p^2 = .01$ .

### **Effect of Disclaimer Label and Instructional Condition on Body Dissatisfaction**

To analyse the impact of disclaimer label and instructional condition on body dissatisfaction, a 3 x 3 between-groups analysis of co-variance was conducted, with pre-exposure body dissatisfaction entered as the co-variate to control for individual differences. As can be seen from the column total adjusted means in Table 2, the main effect for disclaimer label on body dissatisfaction was not significant,  $F(2, 368) = 1.21, p = .299, \eta_p^2 = .01$ . In contrast, the main effect for instructional condition was significant,  $F(2, 368) = 9.61, p < .001, \eta_p^2 = .05$ . Post hoc comparisons confirmed that body dissatisfaction was significantly greater in the social comparison instructional condition compared to both the neutral and

distractor instructional conditions,  $p = .012$  and  $p < .001$  respectively. Finally, the interaction between disclaimer label and instructional condition was not statistically significant,  $F(4, 368) = 0.88, p = .474, \eta_p^2 = .01$ .

### **Trait Appearance Comparison as a Moderator on State Appearance Comparison**

A hierarchical regression analysis was conducted to test whether trait appearance comparison moderated the effect of disclaimer label or instructional condition (or both) on state appearance comparison. As recommended by Aiken and West (1991), trait appearance comparison scores were centred around the mean ( $M = 3.34$ ). Four dummy-coded variables were created: generic (0, 1, 0) and specific (0, 0, 1) for the disclaimer label conditions (no disclaimer as the reference group), and distractor (0, 1, 0) and comparison (0, 0, 1) for the instructional conditions (neutral as the reference group). At Step 1, the four dummy coded variables and centred trait appearance comparison were entered. At Step 2, the eight two-way product terms were entered. At Step 3, the four three-way product terms were entered.

Step 1 accounted for significant variance in state appearance comparison,  $R^2 = .349, F(5, 372) = 39.88, p < .001$ . As trait appearance comparison was significant within this step,  $B = 1.20, \beta = .46, p < .001$ , trait appearance comparison was a significant predictor of state appearance comparison. Neither Step 2,  $R^2_{Change} = .019, F_{Change}(8, 364) = 1.35, p = .217$ , nor Step 3,  $R^2_{Change} = .005, F_{Change}(4, 360) = 0.67, p = .614$ , explained significant additional variance. Thus, trait appearance comparison did not moderate the effect of either disclaimer label or instructional condition on state appearance comparison.

### **Trait Appearance Comparison as a Moderator on Body Dissatisfaction**

A similar hierarchical regression analysis was conducted to test whether trait appearance comparison moderated the effect of disclaimer label or instructional condition on body dissatisfaction. Pre-exposure body dissatisfaction scores were centred around the mean ( $M = 47.91$ ) and entered at Step 1. At Step 2, the four dummy coded variables and centred

trait appearance comparison were entered. At Step 3, the eight two-way product terms were entered. At Step 4, the four three-way product terms were entered.

At Step 1, pre-exposure body dissatisfaction accounted for significant variance in post-exposure body dissatisfaction,  $R^2 = .758$ ,  $F(1, 376) = 1179.99$ ,  $p < .001$ . At Step 2, significant additional variance was explained,  $R^2_{Change} = .025$ ,  $F_{Change}(5, 371) = 8.43$ ,  $p < .001$ , with trait appearance comparison predicting change in body dissatisfaction,  $B = 5.02$ ,  $\beta = .12$ ,  $p < .001$ . At Step 3, no significant additional variance was explained,  $R^2_{Change} = .003$ ,  $F_{Change}(8, 363) = 0.66$ ,  $p = .730$ , indicating that there were no two-way interactions. However, Step 4 did explain significant additional variance,  $R^2_{Change} = .008$ ,  $F_{Change}(4, 359) = 3.69$ ,  $p = .006$ , indicating a significant three-way interaction between trait appearance comparison, disclaimer label, and instructional condition on post-exposure body dissatisfaction.

To specify the nature of this three-way interaction, the two-way interaction between trait appearance comparison and disclaimer label was analysed for each instructional condition. For the distractor instructional condition, this interaction proved significant,  $R^2_{Change} = .023$ ,  $F_{Change}(2, 119) = 5.46$ ,  $p = .005$ . Within this step, only the specific disclaimer label product term (specific disclaimer label x trait appearance comparison) was significant,  $B = 13.61$ ,  $\beta = .20$ ,  $p = .003$ . This indicated that the relationship between trait appearance comparison and body dissatisfaction was significantly more positive in the specific disclaimer label condition than in the no disclaimer label condition (the reference group). In contrast, for both the neutral and social comparison instructional conditions, the interaction between trait appearance comparison and disclaimer label was not significant,  $R^2_{Change} = .006$ ,  $F_{Change}(2, 119) = 2.07$ ,  $p = .131$ , and  $R^2_{Change} = .003$ ,  $F_{Change}(2, 119) = 0.89$ ,  $p = .415$ , respectively.

To illustrate the form of the significant interaction for the distractor instructional condition, the relationship was graphed (see Figure 1). Following the recommendation of

Aiken and West (1991), one standard deviation below and above the mean was used to represent low and high levels of trait appearance comparison (the moderator). The y axis represented post-exposure body dissatisfaction, controlling for pre-exposure body dissatisfaction, where a higher value indicated greater dissatisfaction. As can be seen, trait appearance comparison made little difference to women who saw no disclaimer labels or generic disclaimer labels. In contrast, there was a strong positive relationship between trait appearance comparison and body dissatisfaction for women in the specific disclaimer label condition. Specific disclaimer labels led to increased body dissatisfaction for women higher on trait appearance comparison, but decreased body dissatisfaction for women lower on this trait.

### **Discussion**

Overall, the major findings of the current study are clear. First, there was no main effect of disclaimer labels on social appearance comparison or body dissatisfaction, and therefore disclaimer labels did not reduce either. Second, there was a main effect of instructional condition on both social appearance comparison and body dissatisfaction whereby, irrespective of disclaimer label type, the social comparison instructional condition led to the highest levels of both social appearance comparison and body dissatisfaction. Finally, there was a three-way interaction between trait appearance comparison, disclaimer label type, and instructional condition on post-exposure body dissatisfaction. More precisely, for women in the distractor instructional condition who saw specifically worded disclaimer labels, those high on trait appearance comparison experienced increased levels of body dissatisfaction, whereas those low on trait appearance comparison experienced reduced levels.

The lack of any overall protective effect of disclaimer labels on body dissatisfaction supports previous findings for disclaimer labels affixed to fashion magazine advertisements

(Ata et al., 2013; Bury et al., 2015; Tiggemann et al., 2013). As suggested by Ata et al. (2013), it could be that brief exposure to disclaimer labels affixed to advertisements within one short session does not give women the opportunity to reach the complex level of thinking required to fully consider the content of the messages, or to start protecting themselves against the harmful effects of thin ideal exposure. It is possible that with repeated exposure to disclaimer labels over different sessions, women may be in a better position to consider the implications of digital manipulation and thin ideal exposure, and thereby gain benefit from disclaimer labels.

The main effects observed for instructional condition showed that instructions were not irrelevant, as being asked to rate the advertisements in different ways influenced how participants processed the thin ideal images, supporting previous research in this area (Cattarin et al., 2000; Tiggemann & McGill, 2004; Tiggemann & Polivy, 2010; Tiggemann et al., 2009). The three comparison items embedded within general items were sufficiently powerful to lead to increased levels of both social appearance comparison and body dissatisfaction. In contrast, in the distractor instructional condition, social appearance comparison and body dissatisfaction were lower than in both the other instructional conditions. Thus, focussing on non-appearance qualities of the advertisements seemed to block the normal level of appearance comparison generated in response to thin ideal exposure. These findings for instructional condition are consistent with suggestions by Tiggemann et al. (2009) and Want (2009) that experimental instructions can influence how participants process thin ideal imagery. One practical implication of this finding is that body dissatisfaction would be reduced if women could be educated to process media images in a less self-relevant way. This is consistent with the rationale of media literacy programs which aim to educate and teach individuals to view media images more critically and to reduce their social comparison with those images (Ogden & Sherwood, 2008; Posavac et al., 2001).



Although we predicted that instructional condition would interact with disclaimer label type in determining both social appearance comparison and body dissatisfaction, this did not occur. On the other hand, there was a three-way interaction between trait appearance comparison, disclaimer label type and instructional condition on post-exposure body dissatisfaction. In particular, trait appearance comparison was found to moderate the effect of disclaimer label type on body dissatisfaction for women in the distractor instructional condition, but not for women in the neutral or social comparison instructional conditions. It seemed that when women were cognitively busy rating the thin ideal advertisements on non-appearance qualities, exposure to specific disclaimer labels led to increased body dissatisfaction for women high on trait appearance comparison, but decreased body dissatisfaction for women low on trait appearance comparison. This replicates the results of Tiggemann et al. (2013), and shows that their finding (under similar ‘distractor’ instructions) was not a function of the particular stimuli used. In addition, the current results are congruent with eye-tracking research which has shown that specifically worded disclaimer labels direct women’s visual attention towards body areas mentioned, particularly for women high on trait appearance comparison (Bury et al., 2014).

The above finding shows that women low on trait appearance comparison, even when cognitively busy with non-appearance processing, were able to gain protective benefit from specifically worded disclaimer labels. However, this cognitive load did not stop women high on trait appearance comparison from experiencing body dissatisfaction after reading a specifically worded disclaimer label. This is consistent with the idea that appearance comparison can be automatic (Bessenoff, 2006; Gilbert et al., 1995; Want, 2009). This seems to be particularly likely for women high on trait appearance comparison. Specific disclaimer labels may trigger automatic appearance comparison for these women (due to sensitisation to appearance-related information), and they may be less motivated to protect themselves

against unfavourable comparisons (Want, 2009; Yamamiya et al., 2005). Thus, disclaimer labels may be powerless to tackle social comparison for women high on trait appearance comparison. As previous research has shown that the negative effects from thin ideal exposure happen particularly for women who have internalised the thin ideal to a greater extent (Dittmar & Howard, 2004; Grabe et al., 2008; Groesz et al., 2002), intervention efforts might be more effective if focussed on preventing internalisation of the thin ideal, rather than trying to reduce appearance comparison after the fact.

As with all research, the current findings should be interpreted in the context of some limitations. The findings cannot necessarily be generalised outside the current sample of young, predominantly white university students. Similarly, the findings only apply to women's fashion magazine advertisements, not other sources of thin ideal imagery available in magazines or more broadly in society (Want, 2009). As the research was conducted in a laboratory environment, participants viewed the magazine advertisements somewhat differently from how they would in a real world setting. As such, research could usefully extend investigations of the effects of disclaimer labels into naturalistic settings, such as the reading of fashion magazines at the hairdresser's or in the doctor's waiting room, or the exposure to advertisements on public billboards. Another limitation was that we measured trait appearance comparison after the manipulation. Future research should assess trait appearance comparison in a separate earlier session to avoid the possibility of participants being primed by the experimental manipulations. Finally, although we took steps to create a convincing cover story ('the effectiveness of advertisements targeted at women') supported by asking for ratings of the effectiveness of the advertisements and a recall task, we cannot definitively rule out the operation of demand effects.

In summary, it seems clear from the current study, together with the previous findings of Ata et al. (2013), Bury et al. (2015), and Tiggemann et al. (2013), that disclaimers of

digital alteration do not reduce body dissatisfaction following exposure to thin ideal fashion magazine advertisements. In addition, the present study showed that experimental instructions are important in determining body image outcomes following thin ideal exposure, as manipulating how participants processed advertisements influenced both social appearance comparison and body dissatisfaction. Finally, trait appearance comparison was relevant as it moderated the effect of disclaimer label on body dissatisfaction for women in the distractor instructional condition. To conclude, although experimental instructions can affect the type of processing women engage in, individual differences in the tendency to compare on the basis of appearance need to be considered in any future investigation of disclaimer label use. Thus, the current study well illustrates the complexity of the task ahead for policy makers in determining the most effective form of digital alteration disclaimer label.

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Table 1

*Means (and standard deviations) for state appearance comparison*

	Disclaimer Label Condition			Total
	No label	Generic label	Specific label	
Instructional Condition				
Neutral	3.80 (1.60)	4.52 (1.77)	4.19 (1.54)	4.17 (1.65) <sup>b</sup>
Distractor	3.38 (1.84)	3.50 (1.88)	4.05 (1.85)	3.64 (1.87) <sup>a</sup>
Social Comparison	5.06 (1.27)	5.16 (1.60)	5.35 (1.56)	5.19 (1.48) <sup>c</sup>
Total	4.08 (1.73)	4.39 (1.87)	4.53 (1.74)	

*Note.* Superscripts indicate statistically significant different groups.

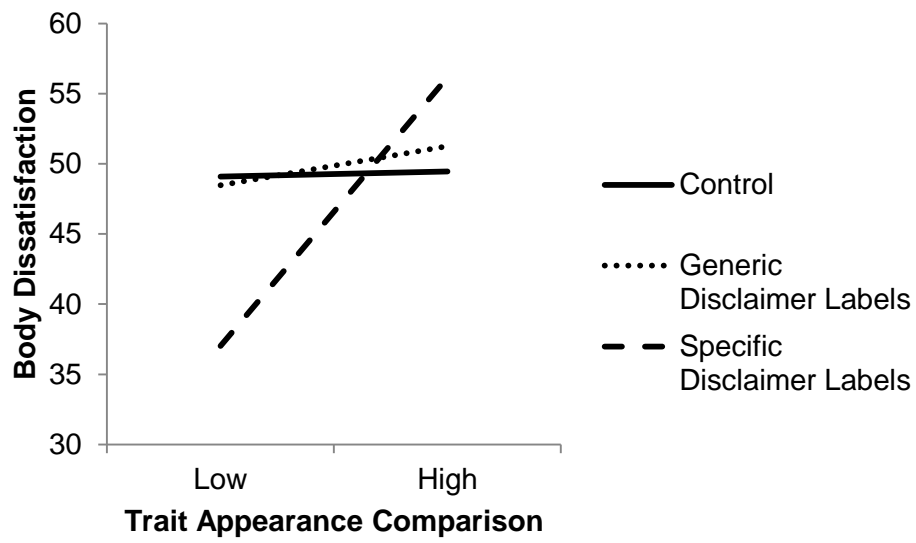


Table 2

*Adjusted means (and standard errors) for body dissatisfaction*

	Disclaimer Label Condition			Total
	No label	Generic label	Specific label	
<b>Instructional Condition</b>				
Neutral	50.22 (2.10)	53.14 (2.09)	49.07 (2.09)	50.81 (1.21) <sup>b</sup>
Distractor	49.74 (2.10)	49.82 (2.09)	45.68 (2.10)	48.41 (1.21) <sup>a</sup>
Social Comparison	53.75 (2.09)	56.48 (2.09)	57.02 (2.09)	55.75 (1.21) <sup>c</sup>
<b>Total</b>	51.24 (1.21)	53.14 (1.21)	50.59 (1.21)	

*Note.* Superscripts indicate statistically significant different groups.



*Figure 1.* Body dissatisfaction as a function of disclaimer label condition and trait appearance comparison for the distractor instructional condition.