Chapter 4

Negotiated media effects: Peer feedback modifies effects of media's thin-body ideal on adolescent girls

“Some of them are way too thin - you can count their bones. I don’t think that being very thin is pretty. Yet, I would like to look like them.”

Respondent, girl, 13-years-old
Negotiated media effects: Peer feedback modifies effects of media’s thin-body ideal on adolescent girls

Abstract

The present study introduces a theoretical framework on negotiated media effects. Specifically, we argue that feedback of peers on thin-body ideal media images and individual dispositions guide effects on adolescent girls’ psychosocial responses to media exposure. Therefore, we examined the thin-body ideal as portrayed in media and peers’ feedback on such thin-ideal images in their combined effects on adolescent girls’ body dissatisfaction, objectified body consciousness, and social comparison with media models. Hence, media models and peer comments were systematically combined as incorporated entities in YouTube-formats. Hypotheses were tested in a 3 (media models: extremely thin vs. thin vs. normal weight) x 3 (peer comments: 6kg-underweight vs. 3kg-underweight vs. normal-weight) x 2 (appearance schematicity: lower vs. higher) between-subjects design (N = 216). Results showed that peer comments indicating that a media model was ‘only 3kg-underweight’ exerted most negative responses, particularly in girls who strongly process appearance relevant information. Peer feedback interacts with media models in guiding perceptions of what is considered an ‘ideal’ body shape. Results highlight the important role of peers as well as individual predispositions in view of understanding how thin-ideal media images may impact adolescent girls’ body image concerns.
4.1 Introduction

Adolescent girls face a dilemma in regard to Western’s thin-body ideals that they frequently encounter via media sources (Field, Cheung, Wolf, Herzog, Gortmaker, & Colditz, 1999a; Grabe, Ward, & Hyde, 2008; López-Guimerà, Levine, Sánchez-carracedo, & Fauquet, 2010). On one hand, adolescent girls seem to be aware of the fact that the images such as portrayed in the media over-represent and idealize thin body images (Fouts & Burggraf, 2000). On the other hand, adolescent girls do tend to give in to the thin-ideal as normative and realistic representations of the female body, resulting in negative effects of exposure to and reinforcement of thin-ideal standards as frequently aired in Western media (Harrison, 2000; López-Guimerà et al., 2010). However, given the inconsistency in media effect studies (Holmstrom, 2004; Ferguson, 2013), we believe it is important to investigate media’s impact in view of factors that moderate assumed media effects. While previous studies have underscored the role of individual predispositions for body issues in determining media’s impact on body perceptions, rendering some individuals more vulnerable than others (e.g., Aubrey, 2006; Roberts & Good, 2010), the role of peers seems understudied thus far. In brief, in the current paper, we argue that media effects are negotiated by individual differences in susceptibility as well as by peer feedback on media messages (here the media message is: an ideal body is thin).

Previous research does indicate peers as an important intensifier of body image perceptions and socio-cultural ideals in (pre)adolescent girls (e.g., Dohnt & Tiggemann, 2006a; Jones, Vigfusdottir & Lee, 2004). Several studies have considered the role of peers in comparison to media’s influence on body perceptions (e.g., Clark & Tiggemann, 2006; Ferguson, Muñoz, Contreras & Velasquez, 2011; McCabe & Ricciardelli, 2005). Furthermore, evidence was found for appearance conversations among peers mediating media exposure on body dissatisfaction (Clark & Tiggemann, 2006). However, to our knowledge, our study is one of the first to investigate how peer influence can negotiate media influences. To do so, the present study systematically combined peer comments and thin-ideal media images in an experimental design (including control groups with average-sized media models) to assess the combined effects on adolescent girls’ psychosocial responses (i.e., in terms of social comparison with media models, objectified body consciousness, and body dissatisfaction). Furthermore, we included appearance schematicity (defined below) to account for expected individual differences in response to the materials (e.g., Hargreaves & Tiggemann, 2002a). In the following, the extant research is summarized regarding the role of media and peers in affecting body image perceptions among adolescent girls. We also discuss how we infer the combined influence of media, peer influence, and individual differences and conclude with the formulation of our hypotheses.
4.1.1 Thin-Body Ideal and Media Exposure

Media's role in contributing to body issues and body perceptions has been widely debated, and research in this realm has shown inconsistent results. Some studies associate media use with being overweight or obese as time spent inactively while consuming media and exposure to food-related content have been found to guide weight-gain and overeating (e.g., Must & Tybor, 2005; Bodenlos & Wormuth, 2013). Other studies focus on the effects of media content, such as airing thin-body ideals, on the emergence or exacerbation of body dissatisfaction and unhealthy dieting behaviors (e.g., Field et al., 1999a; Groesz et al., 2002). Interestingly, despite the dominant portrayal of the thin-body ideal in western media, overweight and obesity is on the rise (Wang & Lobstein, 2006). While the discrepancy between the thin body size of media models and the body size of the actual female population is widening (Fouts & Burggraf, 2000), we question how other factors interfere in the assumed effects of media portrayals of a thin-body ideal (e.g., Veldhuis, Konijn, & Seidell, 2012).

The inconsistency in thin-body ideal media effects research is reflected by study results varying from induced negative body perceptions to small effects or no effects, and incidentally even an increase in body satisfaction (Ferguson, 2013; Grabe et al., 2008; Hayes & Tantleff-Dunn, 2010; Holmstrom, 2004; Knobloch-Westerwick & Crane, 2012; López-Guimerà et al., 2010). These differences in results might be partially explained by methodological issues and preexisting individual differences (see Ferguson, 2013; Roberts & Good, 2010). In the following, we discuss the various perspectives in more detail.

Many scholars argue that the overrepresentation of thin-body-ideals in the media causes unhealthy effects and that exposure to this thin-ideal standard is a risk factor for developing body image-related disturbances, especially because the ideal body shape and weight are unattainable for most women (López-Guimerà et al., 2010; Thompson & Stice, 2001; Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999). In a similar vein, research has shown that internalization of the thin-ideal leads to body surveillance and body shame, together named objectified body consciousness (cf. McKinley & Hyde, 1996; Moradi, Dirks, & Matteson, 2005; Sinclair, 2006), in adolescent girls more strongly than in boys (Knauss, Paxton & Alsaker, 2008). Consequently, internalizing media's thin-ideal influences (pre)adolescent girls' weight concerns and might lead to engagement in (unbalanced) weight control practices such as constant dieting (Field et al., 1999a; Field, Camargo, Taylor, Berkey, Roberts & Colditz, 1999b; Field, Camargo, Taylor, Berkey, Roberts & Colditz, 2001; Stice & Bearman, 2001). In sum, a large body of research, including critical summaries such as meta-analyses, have shown that exposure to thin-ideal images induced a negative body image and body dissatisfaction, especially in adolescent girls (Grabe et al., 2008; Groesz, Levine & Murnen, 2002; Hargreaves &
Tiggemann, 2002a; Hargreaves & Tiggemann, 2003; Hargreaves & Tiggemann, 2004; López-Guimerà et al., 2010). These results pointed at media as venues affecting women’s body image.

In contrast, other meta-analyses concluded that thin-ideal media depictions resulted in only small to hardly any effects on body dissatisfaction, especially when women were considered as a uniform entity without preexisting individual differences in body issues (Ferguson, 2013; Holmstrom, 2004). However, both meta-studies also signal that a number of studies in this field are methodologically constrained. For example, the experiments used pictures of thin models without overlaid text, thereby decreasing the ecological validity of the studies’ results (Holmstrom, 2004; also argued by Knobloch-Westerwick & Crane, 2012). Surrounding such images with text and comments would more realistically explain adolescent girls’ response to thin-ideal portrayals. Hence, our study explicitly aimed at assessing the effects of a realistic real-life setting by experimentally combining thin-ideal images and textual comments on these images with peers presented as sender of this information (see for related work on user-generated comments: Lee, 2012).

Previous research has further shown that some individuals are more prone to be influenced by thin-ideal exposure than others (e.g., self-esteem, Aubrey, 2006; neuroticism, Roberts & Good, 2010). In our study, we included appearance schematicity, because this variable is more directly related to body image issues (Hargreaves & Tiggemann, 2002a), and because the role of preexisting body issues deserves more attention in this type of research (Ferguson, 2013). In short, appearance schemas refer to cognitions about appearance that arrange and establish the processing of self-related information, that is, beliefs about one’s own appearance (Hargreaves & Tiggemann, 2002b). In other words, the concept of appearance schematicity reflects the extent to which an individual allocates meaning and importance to one’s appearance. Studies showed that appearance schematicity and schema activation by viewing appearance related content predict body (dis)satisfaction in adolescent girls (Hargreaves & Tiggemann, 2002a; Hargreaves & Tiggemann, 2002b; Tiggemann, 2006). Furthermore, women who more strongly invest in their appearance (i.e., who are higher in appearance schematicity) seemed more susceptible to the negative effects of media than those who are lower in appearance schematicity by showing higher body dissatisfaction after exposure to appearance-related information (Hargreaves & Tiggemann, 2002a; Lavin & Cash, 2001). Thus, exposure to schema-relevant information can subsequently induce changes in mood and body satisfaction. Therefore, including appearance schematicity as an individual differences variable seems relevant and essential in our study.
4.1.2 Peer Influence

Media are omnipresent in adolescents’ lives, and may therefore serve as an important source of aesthetic standards including the thin-body ideal (e.g., Grabe et al., 2008; Park, 2005). For adolescents, models and celebrities as portrayed in media often function as reference points when it comes to appearance comparisons (Botta, 1999). Moreover, peers also are influential at this stage of adolescent development (e.g., Dohnt & Tiggemann, 2006a; Dohnt & Tiggemann, 2006b). Via social reinforcement, peer pressure, and modeling mechanisms, adolescents’ peers may further strengthen or weaken a girls’ body dissatisfaction, drive for thinness, distorted weight perceptions, and eating behavior (e.g., Field et al., 2001; Phares, Steinberg & Thompson, 2004; Stice, 1998; Stice & Whitenton, 2002).

Several studies classified peers as reinforcing factors that influence adolescents’ body image concerns and eating attitudes (e.g., Ata, Ludden & Lally, 2007; Keery, Van den Berg & Thompson, 2004; Phares et al., 2004; Paxton, Schutz & Wertheim, 1999). Along the lines of Festinger’s (1954) social comparison theory, especially same-sex peers proved to be relevant targets for body appearance-related comparisons, next to media models, which seemed to further induce body dissatisfaction (Jones, 2011).

Not only actual peer behavior such as weight control practices is significantly related to that of individual adolescent girls (Levine, Smolak, Moodey & Hessen, 1994), but due to seeking peer acceptance, girls also seem to adopt perceived weight-related peer beliefs and behaviors (Paxton et al., 1999). For example, perceived peers’ desire for thinness was a precursor for young girls’ desire for thinness, appearance satisfaction, and even purging behavior (Field et al., 1999b; Dohnt & Tiggemann, 2006b). Furthermore, girls more than boys discuss their appearance and weight with peers (Jones et al., 2004; Jones & Crawford, 2006). These appearance conversations seem to reinforce the importance to conform to an appearance-ideal resulting in body dissatisfaction (Jones, 2004). Several studies support that conversations with friends about appearance, peer appearance criticism, and peer appearance pressure are directly related to body discontent (e.g., Ata et al., 2007; Jones et al., 2004; Jones & Crawford, 2006; Lawler & Nixon, 2011; Schroff & Thompson, 2006). Because peers have the capacity to influence girls’ weight- and appearance-related attitudes and beliefs, they are a relevant sender of feedback on media models’ body shape and weight. Therefore, we address the combined influence of media and peers in the present study.

4.1.3 Peer Comments on Media Models’ Weight Status

Considering the role of peers in the developmental stage of adolescence is one source underlying our assumption of a combined influence of peer feedback on media models in the present study (e.g., Brown & Larson, 2009). Another source stems from the use of information
labels in research domains such as media violence and nutrition. Previous research showed that labels providing the consumer with information on the fat percentage of food, effectively directed people’s willingness to eat less fat when compared to a warning text or no text (Bushman, 1998). Similarly, labeling food with health and nutrition information influenced consumers’ perceptions and promoted more healthy food choices (Gray, Karnon & Blackwell, 2011; Papies, & Veling, 2012; Sumanac, Mendelson, & Tarasuk, 2012). A review on nutrition labeling suggested that adding interpretational aids like descriptors and reference values are helpful (Cowburn & Stockley, 2005). Furthermore, in this context, information labels seem more effective to reach a desired goal than warning labels (cf. Bushman, 2006; Nije Bijvank, Konijn & Bushman, 2009). Likewise, a study more closely related to ours, showed that exposure to images of slender models or to thin-ideal body images combined with exercise- and diet-related texts reduced eating among women when compared to a experimental groups that saw no images at all or images with irrelevant text about geographical locations (Harrison, Taylor & Marske, 2006). From their results we may conclude that adding text to images rephrases the impact of images. Hence, we included information labels in our study to test whether they could positively influence adolescent girls’ health behavior and beliefs.

In a similar vein, informative ‘weight labels’ showed counteracting effects when an extremely thin body image was presented together with information explicating the extremely thin weight status (Veldhuis et al., 2012; Veldhuis, Konijn & Seidell, 2014). That is, in adolescent girls, accurate weight labels on extremely thin media models (i.e., ‘this model is underweight’) induced lower levels of dissatisfaction with their own body and lower levels of social comparison with media models than extremely thin media models combined with a ‘normal weight’-label. Furthermore, adding a ‘normal weight’ information label resulted in a normalization effect throughout the body shape conditions (Veldhuis et al., 2012). That is, adding a ‘normal weight’-label led adolescent girls to believe that the presented model (of whatever weight status) was considered of ‘normal’ shape. More specifically, such information on a (pre-tested) normal-shaped media model induced significantly less negative body perceptions as compared to adding a ‘normal weight’-label to an extremely thin model. The present study further expands this reasoning by transforming such anonymous information labels into supposedly more relevant feedback of peers who comment on attractive models in the media.

Thus far, no study has systematically investigated the combined influence of media models and immediate peer feedback on a media model’s weight status on adolescent girls’ weight-related psychosocial responses in an experimentally controlled design. Therefore, in the present study, we integrated these two influences into one set of stimuli via a YouTube-format to test whether feedback from peers on thin media models might affect social
comparison mechanisms, as well as adolescent girls’ objectified body consciousness and body dissatisfaction. In this format, peers’ opinions are presented as reference values (cf. Cowburn & Stockley, 2005). Drawing on aforementioned studies in the discrete contexts of media’s thin-ideal, information labels, and peer influence, we expected that peer comments would modify the effects of media exposure depending on the content of such comments accompanying the media images.

4.1.4 Overview of the Present Study
In order to investigate how peer comments can negotiate effects from exposure to thin-ideal media images, we systematically combined peer and media influences in an experimental research design. By combining normative peer comments with media models, the present study more explicitly mimics what implicitly occurs through media exposure, that is, to set a standard of what should be considered ‘normal’. Thus, we expected a normalization effect (H1) of peers commenting on media models in terms of a ‘normal weight’: ‘Normal weight’-comments on an extremely thin media model will result in more body dissatisfaction, more objectified body consciousness, and more social comparison with media models compared to a moderate-weight media model with ‘normal weight’-comments. Moreover, a counteracting effect (H2) occurs when adolescent girls are exposed to an ‘extremely thin’ media model accompanied by congruent peer comments explicating the extreme underweight status, resulting in lower levels of body dissatisfaction, lower levels of objectified body consciousness and lower levels of social comparison with media models compared to an extremely thin media model with mismatching ‘normal weight’-comments.

Furthermore, we expected that individual differences in terms of appearance schematicity moderate the effects of the above assumed interaction between media models and peer comments. That is, these effects would hold more strongly for girls who are higher in appearance schematicity than those who are lower in appearance schematicity (H3).

4.2 Method

4.2.1 Participants and Design
Participants were 216 adolescent girls (11-18 years old, $M_{age}=14.15$, $SD_{age}=1.47$), randomly selected from eight public secondary schools in both urban and rural areas in the Netherlands. Responsible school authorities, teachers, parents, and respondents provided a 99% consent.¹ Their educational ability levels varied from low (34.7%), middle (28.7%) to high (36.6%) and a

¹ The high level of consensus was due to our class-wise procedure.
The vast majority was born in the Netherlands (96%). The study was conducted in accordance with the ethical guidelines of our institution and approved by the institutional review board.

Hypotheses were tested in a 3 (media models’ body shape: extremely thin vs. thin vs. normal) x 3 (peer comments: ‘6kg-underweight/extremely thin’ vs. ‘3kg-underweight/thin’ vs. ‘normal-weight’) experimental design. Appearance schematicity (lower, higher) was considered a moderating measure, and body dissatisfaction, objectified body consciousness, and social comparison with media models served as dependent variables.

4.2.2 Materials

**Media models’ body shape.** Media models’ body shape included three conditions: (a) extremely thin, (b) thin or (c) normal weight. Three media models to represent these conditions were digitally available and have been selected after a pretest. They were successfully applied in a previous study on adolescent girls, showing that the three models significantly differed in respondents’ perceptions of their thinness, while not differing in perceived attractiveness (Veldhuis et al., 2012). Thus, the present study used these three images accordingly. It is important to note that the media images were assessed from an adolescent girls’ viewpoint (see also, Veldhuis et al., 2014).

**Peer comments.** The manipulation of peer comments consisted of texts accompanying the models, claiming the media model to be either (a) ‘6kg-underweight/extremely thin’, (b) ‘3kg-underweight/thin’, or (c) ‘normal-weight’. For example, in the ‘6 kilogram underweight’-comment condition, the title and one comment literally addressed the 6 kilogram underweight status of the model (e.g., title: ‘Lauren 6 kilo underweight’; comment: ‘yes, she for sure is 6 kilos underweight’). Other comments in this condition were more implicitly reflecting the underweight status (e.g., ‘extremely too thin’; ‘I love the music, but yes she is too skinny’), or were neutral filler statements (e.g., ‘tatidaiada, nice weather’). The same regularity was pursued for all peer comment conditions. It is important to note that the peer comments were intended to mainly reflect the model’s (under)weight status, not to evaluate the model’s appearance in general. Comments were similar across the conditions, only varying in the ‘normal weight’ or ‘underweight’ aspect. A YouTube-format was used to deliver the media images to which peers ‘authentically’ commented.

**YouTube format.** The three types of peer comments and the three different media models were systematically combined to create nine separate stimuli. The peer comments and media models were integrated as if they were an original full color screenshot of a YouTube-clip (for more detailed account, see Konijn, Veldhuis, & Plaisier, 2013). YouTube is a highly

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2 Importantly, checks for possible confounds of a generally perceived peer influence from classmates and close friends on weight issues (cf. measurement device in Keery et al., 2004) were not significant throughout the peer comment conditions.
popular website used to upload short movies on a wide variety of topics that can be viewed by others (Madden, 2009). Viewers can react to these YouTube movies by posting comments directly under the clip. This feature made YouTube an ecologically valid setting to combine media models with ‘peers’ commenting on those models in a convincing and appealing way in view of our target audience. As said, the models varied in body shape and the peer comments varied in valence and weight status feedback. We mimicked ‘common’ peer comments to YouTube clips by using the jargon of adolescents (e.g., “Nice vid”) and their masked usernames (e.g., “Roxxie”), yet, we consistently varied them according to our experimental design.

Each YouTube-screenshot consisted of the clip’s title, a still image of one of the three media models, and 10 comments relating to one of the three peer comments conditions. In all conditions, the media model was called ‘Lauren’. In sum, the combination of media models’ body shapes and online peer comments directed the nine experimental conditions of our study. An example of the stimulus materials is provided in the Appendix.

4.2.3 Procedure
In class, the study was presented as a study on ‘media use and perceptions’. Female participants were randomly assigned to one of the peer comments by media models’ body shape experimental conditions. There was no cover story other than our global indication of a study on ‘media use and perceptions’. We also kept instructions in the questionnaire simple and clear, given the young age of our participants. Anonymity and confidentiality of their answers was assured. They completed their assigned questionnaire individually.

In the questionnaire, participants were first asked about social-demographic features, and about their level of appearance schematicity. Subsequently, they saw a large size and full-color presentation of the YouTube-screenshot as designed for the present study on a separate page (i.e., featuring one of the nine experimental conditions) in the questionnaire. The instruction in the questionnaire for viewing the stimulus was concise and straightforward (i.e., “carefully consider the following page before turning to the next page”). Then, the girls answered questions about the media models’ body appearance related to a manipulation check, body dissatisfaction, objectified body consciousness, and social comparison with media models.

Upon completion, they were debriefed and provided the opportunity to ask questions. Finally, the research assistant discussed media effects, how portrayals of media models are made up and media manipulation awareness with the participants in class to increase media literacy.
4.2.4 Measures

All measurements of body dissatisfaction, objectified body consciousness, social comparison with media models, and appearance schematicity were based on previous research and taken by means of a paper-and-pencil questionnaire, containing Likert-type items followed by 5-point rating scales (1=strongly disagree; 5=strongly agree). The items were preceded by short instructions: 'The following set of questions pertains to how you feel at this moment. Please indicate how much you agree or disagree with each statement'. The instruction "at this moment" indicates that we referred to self-reported state measures (see argumentation in Moradi & Huang, 2006, p. 379).

**Body Dissatisfaction** was measured by 7 indicative and 6 counter-indicative items (e.g., 'I think my belly is too fat'; 'I'm happy with my figure'). The original 9-item Body Dissatisfaction Subscale from the Eating Disorder Inventory of Garner, Olmstead and Polivy (1983) was expanded with 4 items (i.e., addressing 'appearance in general' and 'breast size') to more equally balance the addressed body parts and the number of indicative versus counter-indicative items. After recoding the counter-indicative items, the scale had a good fit (Cronbach's alpha = .86) with higher scores indicating more body dissatisfaction.

**Objectified Body Consciousness** was based on the Objectified Body Consciousness Scale for Preadolescents and Adolescents (Lindberg, Hyde & McKinley, 2006). In the present study, we used 8 items to measure two dimensions of objectified body consciousness: body surveillance and body shame. **Body surveillance** was measured with three items (e.g., 'I worry a lot about how others see me'). Based on previous research of the target group (Veldhuis et al., 2012; Veldhuis et al., 2014) and its overlap with comparison items, the following item was removed from the original four-item body surveillance subscale: 'I often compare how I look with how other people look'. **Body shame** was measured with five items (e.g., 'I would feel embarrassed for people to know how much I weigh'). Principal component and reliability analyses revealed all body surveillance and body shame items to form just one factor, with a Cronbach’s alpha of .84. A higher score indicates more objectified body consciousness in terms of body surveillance and body shame.

**Social Comparison** with media models was measured with 7 items from The Internalization Scale of the Sociocultural Attitudes Toward Appearance Questionnaire (Heinberg, Thompson & Stormer, 1995). Sample items are: 'I compare my body with the girls and women in magazines and TV' and 'I would like to look like girls and women on TV and in movies'. Cronbach's alpha = .94.

**Appearance Schematicity** was measured with 11 items with the Appearance Schemas Inventory (Cash & Labarge, 1996). Three questions were removed from the original ASI-scale since pretesting indicated that these items were too difficult for our young target group to be
understood. A sample item is 'What I look like is an important part of who I am'. Cronbach’s alpha = .79. A median split was used to create the lower and higher appearance schematicity groups for the purpose of analysis (the cut-off score was 2.45).

4.3 Results

4.3.1 Manipulation Check of Media Models’ Body Shape

To check the participants’ interpretation of the media models’ body shape in the present study, they rated a 10-point semantic scale for perceived thinness (i.e., I consider this woman to be ‘extremely thin’ (1) to ‘extremely big’ (10)). Univariate analysis of variance showed that the media models varied significantly in perceived thinness, $F(2,213) = 4.04$, $p = .02$, $r = .192$. Accordingly, post-hoc tests (Bonferroni) showed that the ‘extremely thin’ body shape was rated significantly thinner than the ‘normal’ body shape ($M = 3.92$, $SD = 1.05$ versus $M = 4.34$, $SD = .96$, $p = .03$, respectively) and marginally thinner than the ‘thin’ body shape ($M = 4.29$, $SD = .89$, $p = .07$).

The ‘normal’ body shape and the ‘thin’ shape did not significantly differ on perceived thinness ($p = 1.00$), while they did in the previous study (Veldhuis et al., 2012). For the purposes of the present study, we could collapse the ‘thin’ and ‘normal’ media models’ body shape conditions for further analyses (referred to as thin-normal condition in the following). Distribution of participants per condition was thus: $n = 78$ in the extremely thin body image condition, and $n = 138$ in the thin-normal body image condition. The multivariate analysis of variance tests correct for this lopsided distribution. Moreover, results were largely similar when analyses were conducted for the three models separately.

4.3.2 Hypotheses Testing

To test our hypotheses, a multivariate analysis of variance (MANOVA) incorporated peer comments (6kg-underweight, 3kg-underweight, normal-weight), media models’ body shape (extremely thin, thin-normal), and appearance schematicity (lower, higher) as between-subjects factors, and body dissatisfaction, objectified body consciousness, and social comparison with media models as dependent measures.\(^3\)

The multivariate test showed multivariate main effects for peer comments (Wilks’ $\lambda = .939$, $F(6,404) = 2.14$, $p = .05$, $r = .176$) and for appearance schematicity (Wilks’ $\lambda = .707$, $F(2,213) = 4.04$, $p = .02$, $r = .192$).

\(^3\) Exploratory analysis by means of Pearson’s correlation analyses revealed that appearance schematicity was significantly ($p < .01$) and positively associated with body dissatisfaction ($r = .38$), objectified body consciousness ($r = .62$), and body comparison ($r = .54$), indicating that a higher appearance schematicity relates to more negative body perceptions and more body comparison. Hence, the requirements for performing a multivariate analysis of variance are met.
F(3,202) = 27.91, p < .001, r = .541), but not for media models’ body shape as such (Wilks’ λ = .993, F(3,202) = .504, p = .68, r = .084). However, the main effects were qualified by a significant multivariate two-way interaction effect between media models’ body shape and peer comments, Wilks’ λ = .929, F(6,404) = 2.52, p = .02, r = .189. In addition, a significant two-way interaction was found for peer comments and appearance schematicity, Wilks’ λ = .905, F(6,404) = 3.46, p = .002, r = .221. Finally, the test revealed a multivariate three-way interaction for media models’ body shape by peer comments by appearance schematicity, Wilks’ λ = .937, F(6,404) = 2.24, p = .04, r = .179. Relevant univariate F-tests to specifically test our hypotheses will be described below.

4.3.3 Effects of Media Models’ Body Shape by Peer Comments

Testing the expected normalization (H1) and counteracting effects (H2), univariate F-tests confirmed the significant two-way interaction of media models’ body shape and peer comments for body dissatisfaction, F(2,204) = 4.43, p = .01, r = .189, and objectified body consciousness, F(2,204) = 3.03, p = .05, r = .205, but not for social comparison with media models (p = .22). Consequently, the results for body dissatisfaction and objectified body consciousness will be described in more detail.

Body dissatisfaction. The interaction between media models’ body shape and peer comments on body dissatisfaction is visualized in Figure 4.1 (Table 4.1 for means and standard deviations). To further explain the interaction effect, a simple effect analysis was performed that compared the three different peer comment conditions within each media model condition. The result of this analysis indicated a contrast effect such that the peer comment conditions differed significantly at the level of the extremely thin media model (p = .03). No significant contrast effect was found for the peer comment conditions within the thin-normal media model condition (p = .38). Pairwise comparisons further revealed that the extremely thin media model combined with a ‘3kg-underweight’ peer comment exerted significantly more body dissatisfaction than an extremely thin media model with a ‘normal-weight’ peer comment (p = .010) or with a ‘6kg-underweight’ peer comment (p = .05). Yet, the ‘6kg-underweight’ and ‘normal-weight’ comments on an extremely thin model did not induce different levels of body dissatisfaction (p = .50).

These results contradicted the expectations of normalization and counteracting effects on body dissatisfaction, such that within the extremely thin media model condition not the ‘normal weight’ peer comments, but rather the ‘3kg-underweight’ peer comments induced the highest levels of body dissatisfaction. Thus, an idealization effect seemed to occur in response to peers setting the ‘ideal weight’ of ‘3 kilo underweight’, further discussed in the next section (‘Discussion’).
Table 4.1  Means (M) and Standard Deviations (SD) for Body Dissatisfaction and Objectified Body Consciousness per Media Models’ Body Shape by Differences in Peer Comments

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<td>Extremely thin</td>
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<tr>
<td>6 kg underweight</td>
<td>2.59a</td>
<td>.78</td>
<td>2.66</td>
<td>.59</td>
<td>2.64</td>
<td>.67</td>
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<tr>
<td>3 kg underweight</td>
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<td>2.46</td>
<td>.75</td>
<td>2.61</td>
<td>.88</td>
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<tr>
<td>normal weight</td>
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<td>.86</td>
<td>2.68</td>
<td>.66</td>
<td>2.58</td>
<td>.75</td>
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<tr>
<td>Total</td>
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Note. Means in each column with different subscripts indicate a significant difference based on pairwise comparisons ($p < .05$).

Figure 4.1  Interaction media models’ body shape and peer comments on body dissatisfaction.

Note. Bars with different letters indicate a significant difference in pairwise comparisons ($p < .05$).
Objectified body consciousness. Simple effects analysis comparing the different peer comment conditions per media model, indicated a significant contrast effect of the peer comment conditions at the level of the extremely thin media model \((p = .002)\), but not at the level of the thin-normal media model condition \((p = .63)\). Additional pairwise comparisons revealed that the extremely thin media model combined with '3kg-underweight' peer comments exerted significantly more objectified body consciousness than an extremely thin media model with 'normal-weight' peer comments \((p = .001)\) or with '6kg-underweight' peer comments \((p = .005)\). Yet, the '6kg-underweight' and 'normal-weight' comments on an extremely thin model did not induce different levels of body surveillance and body shame \((p = .64);\) See Figure 4.2; Table 4.1 for means and standard deviations).

Again, an idealization effect of peer comments seemed to occur. That is, the '3kg-underweight' peer comments on the extremely thin media model induced highest levels of objectified body dissatisfaction, thereby suggesting the models’ extremely thin body shape within reach as an ‘ideal weight’.

Figure 4.2 Interaction media models’ body shape and peer comments on objectified body consciousness.

\[\text{Note: Bars with different letters indicate a significant difference in pairwise comparisons (} p < .05).\]
4.3.4 Effects of Appearance Schematicity on Media Models by Peer Comments Interaction

Regarding the individual differences (H3), univariate F-tests following the MANOVA further indicated that the significant multivariate three-way interaction only sustained for objectified body consciousness, \( F(2,204) = 5.97, p = .003, r = .235 \), but not for body dissatisfaction \( (p = .27) \), or social comparison with media models \( (p = .35) \). Subsequently, the effects for objectified body consciousness will be further discussed.

Supplementary simple effect analysis comparing the peer comment conditions per media model revealed a significant contrast effect on objectified body consciousness at the level of the extremely thin media model only for the girls who are higher in appearance schematicity \( (p < .001) \) but not for girls who were lower in appearance schematicity \( (p = .69) \). Furthermore, no contrast effects were found in the thin-normal media model condition. Subsequent pairwise comparisons revealed similar patterns as described for the two-way interaction above, yet, only for girls higher in appearance schematicity. These girls showed significantly more objectified body consciousness when exposed to an extremely thin media model with ‘3kg-underweight’ comments compared to an extremely thin model with a ‘6kg-underweight’ or ‘normal-weight’ peer comments (both \( p’s < .001 \)). For them, the ‘normal-weight’ and ‘6kg-underweight’ peer comments on an extremely thin model did not exert significantly different objectified body consciousness \( (p = .42) \). Moreover, girls who were lower in appearance schematicity showed no significantly different reactions to the different media models by peer comments conditions.

In all, results indicated that the interaction effect of media models by peer comments on objectified body consciousness primarily existed for girls higher in appearance schematicity and less so for those lower in appearance schematicity (see Figure 4.3; Table 4.2 for details). Results of the three-way interaction analysis showed that especially for those who are higher in appearance schematicity, comments of peers indicating that an extremely thin media model is ‘3kg-underweight’ induces the highest levels of body awareness and body shame. Thus, for objectified body consciousness, the results supported our expectations indicating a moderating role for individual differences in terms of appearance schematicity.
Table 4.2  Means (M) and Standard Deviations (SD) for Objectified Body Consciousness per Media Models’ Body Shape by Peer Comments for Girls Lower vs. Higher in Appearance Schematicity

<table>
<thead>
<tr>
<th>Peer comments</th>
<th>Media Models’ Body Shape</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely thin</td>
<td>Thin and normal</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 kg underweight</td>
<td>1.91 (.63)</td>
<td>1.89 (.54)</td>
<td>1.90 (.56)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 kg underweight</td>
<td>1.74 (.43)</td>
<td>1.94 (.57)</td>
<td>1.88 (.53)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>normal weight</td>
<td>1.94 (.74)</td>
<td>1.95 (.50)</td>
<td>1.94 (.61)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.87 (.61)</strong></td>
<td><strong>1.93 (.54)</strong></td>
<td><strong>1.90 (.56)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Peer comments          | Media Models’ Body Shape |          |          |          |          |          |          |
|                        | Extremely thin           | Thin and normal | Total    |          |          |          |          |
| 6 kg underweight       | 2.45 (a)                 | 2.54 (.79) | 2.50 (.77) |          |          |          |          |
| 3 kg underweight       | 3.68 (b)                 | 2.76 (.78) | 3.05 (.87) |          |          |          |          |
| normal weight          | 2.25 (a)                 | 2.60 (.51) | 2.49 (.62) |          |          |          |          |
| **Total**              | **2.74 (.96)**           | **2.64 (.69)** | **2.67 (.80)** |          |          |          |          |

Note. Means in each column with different subscripts indicate a significant difference based on pairwise comparisons, \( p < .05 \).

Figure 4.3  Objectified body consciousness in media models’ body shape by peer comments conditions for girls lower vs. higher in appearance schematicity.

Note. Bars with different letters indicate a significant difference in pairwise comparisons (\( p < .05 \)).
4.4 Discussion

The main goal of our study was to examine how peer feedback on media models’ body shapes strengthens or weakens adolescent girls’ psychosocial responses (in terms of body dissatisfaction, objectified body consciousness, and social comparison with media figures). Therefore, the present study tested the experimentally combined effects of thin media models and peers’ influence by applying explicit weight-related peer communication to media models varying in body size. In addition, we included appearance schematicity to examine the role of individual predispositions for body issues. In sum, our theoretical framework on negotiated media effects covers three hypotheses. That is, we tested a counteracting effect (i.e., peer comments that induce lower levels of negative psychosocial responses from exposure to the thin-body ideal) and a normalization effect (i.e., peer comments that induce higher levels of negative psychosocial responses from the thin-body ideal; see Veldhuis et al., 2012). In fact, our results point at an idealization effect (i.e., through the peer comments, a thin body shape might have been set as an attainable ideal), which will be further discussed below.

Looking at the effects of exposure to thin-ideal images, we found no global main effect of such media exposure on body dissatisfaction, objectified body consciousness, and social comparison with media models. Where the large body of research regarding thin-ideal shows inconsistent results on such psychosocial responses, our findings in the present study line up with studies and meta-analyses that found small effects to no main effects of media’s thin-ideal (Holmstrom, 2004; Ferguson, 2013; Hayes & Tantleff-Dunn, 2010). A reason for not finding such an effect might be due to our carefully controlled design (see Ferguson, 2013) or the fact that we only shortly exposed our participants at one given point in time. However, our study does point at an interaction between thin-ideal images and peers commenting on such images in affecting adolescent girls’ psychosocial body-related responses. This is in line with previous research, showing that both thin-ideal media images and peers are prominent in influencing young girls’ weight-related attitudes and beliefs (e.g., Field et al., 1999b; Paxton et al., 1999; Phares et al., 2004). Hence, our results are among the first highlighting how peer communication coalesces with media exposure in media’s impact on adolescent girls in a systematically controlled experiment.

The interaction effects we found were not in the expected direction, however, drawing on previous research on normalization and counteracting effects (see Veldhuis et al., 2012). In the present study, results showed that adolescent girls who were confronted with an extremely thin media model were most dissatisfied with their own bodies when peers marked this model to be just somewhat underweight (i.e., ‘3kg underweight’) instead of a more accurate 6kg-underweight-status of the model. Similar patterns were found for body surveillance and body shame. Hence, based on these findings, we argue that instead of a normalization effect of the
'normal weight' comments, as in our previous research (Veldhuis et al., 2012), an *idealization effect* might have occurred when peers' feedback on an extremely thin body suggests that this body shape is a reachable goal because it is 'just somewhat underweight'. Because many adolescent girls want to lose weight (e.g., Field et al., 1999a; Neumark-Sztainer & Hannan, 2000) and perceive themselves as not in accordance with the ideal, such peer feedback is confronting and triggers girls' discontent. Put differently, when peers set extremely thin media models as a desirable goal, this might further idealize thin-body media images. However, since no actual input is given on how to attain such a body, most negative effects of the thin-body ideal on body dissatisfaction and objectified body consciousness were evoked in the adolescent girls. Especially girls higher in appearance schematicity responded with reporting higher levels of objectified body consciousness when faced with an extremely thin model that peers indicated as just a little underweight. This result lines up with literature rendering some individuals with preexisting uncertainties or body issues as most vulnerable (Ferguson, 2013; Roberts & Good, 2010). While most adolescent girls are vulnerable given their developmental stage, some may dispositionally be more susceptible to peer and media influence than others.

In an attempt to further explain our findings in terms of an idealization effect, we assume that an extremely thin media model is cognitively processed as a representation of the ideal female body when peers indicate that this body is 'just' 3 kilos underweight, as in the present study. Achieving such an 'ideal body' apparently becomes a reachable goal that girls higher in appearance schematicity may think they should accomplish. Then, peers seemingly provide a comprehensible 'solution' to the felt self-ideal discrepancy (in line with reasoning of Harrison et al., 2006), that is “just lose some weight”. Such an explanation is further supported by the extant literature, revealing that girls feel pressured to conform to the thin-body ideal since they believe that their peers expect them to adhere to it (e.g., Jones & Crawford, 2006; Paxton et al., 1999; Milkie, 1999). Longing for peer acceptance, girls adopt perceived weight-related peer beliefs and behaviours (Paxton et al., 1999) and perceived peers' wish for thinness was an antecedent precursor for young girls' wish to be thin, appearance dissatisfaction, and disturbed eating (Field et al., 1999b; Dohnt & Tiggemann, 2006b).

Another, though related, explanation might come from peer competition theory, which postulates that women find themselves competing with peers from a more evolutionary perspective, that is, in favour of potential (male) partners (Ferguson, Winegard, & Winegard, 2011; Ferguson, Muñoz, Garza, & Galindo, 2013). Following peer competition theory and outcomes of studies in this domain, being attractive in comparison to other peers is very important and feelings of inferiority to peers might guide body dissatisfaction. In both ways, our results further extend theorizing on peers as negotiating thin-body ideal media images in supporting the idea that peer communication can reinforce idealization of media's thin-body
ideal, thereby feeding negative effects of exposure to the thin-ideal body images on adolescent girls' body perceptions.

Our results are further in line with previous research showing that information can successfully direct people's perceptions and behavioral choices (cf. Bushman, 1998; Gray et al., 2011; Harrison et al., 2006; Papies & Veling, 2012), especially when it entails descriptors of a given 'product' and reference values (cf. Cowburn & Stockley, 2005; Sumanac, Mendelson, & Tarasuk, 2012). The results of the present study also provide new insights. Instead of anonymous information labels, we created comments as if they were stemming from actual peers through a YouTube format. Because our results suggest an idealization-effect, going beyond the expected normalization effect, information from peers seems to more strongly influence girls' responses to media models than just anonymous labels. That is, the peer comments induced what body shape should be perceived as 'ideal' (going beyond the 'normal') - the within reach 'just 3 kilo underweight' thin-ideal body shape (i.e., 'something to look out for'). Therefore, we may tentatively conclude that the sender of the information plays an important role in (re)directing the effects of thin-ideal images on psychosocial responses of vulnerable adolescent girls.

As all studies, our study has several limitations and strengths. First, the 'peers' we used in our materials were simulated and presented as individuals of a similar age and using similar media as our target group, yet, they were no actual real-life peers (i.e., no friends or classmates). However, even stronger effects may be expected if actual peers like friends and classmates would provide the comments.

Second, the experimental design of the current study allowed us to carefully test our proposed causal relationships of combined media and peer communication on short term effects of various body shapes. The inclusion of carefully chosen control conditions should be considered a strength of the present study. That is, we increased the internal validity of our study by comparing thin-ideal media models with average-sized media models in stead of nonhuman objects (see Ferguson, 2013). Furthermore, a strength of our study also is that we systematically combined media and peer influences in a carefully controlled experimental design in which we used text and images together. This adds to the ecological validity of our study (cf. Holmstrom, 2004; Knobloch-Westerwick & Crane, 2012). Other strengths are the inclusion of an individual predisposition as a moderator (cf. Ferguson, 2013; Roberts & Good, 2010); and avoiding demand characteristics by using adolescent girls who are unaware of our study aims and procedures as our target group (see Ferguson, 2013).

Future longitudinal research could include baseline and follow-up measures to more precisely assess the effects of peer comments and media model combinations over time and through various developmental stages. Furthermore, the measurement of social comparison
Peer Feedback

could be extended in future studies, because the current measurement of social comparison solely aims at appearance comparison with media models. It would be an interesting extension to also investigate the role of appearance comparison with one's actual peers.

In line with the above reasoning, future research could elaborate on the role of wish-identification with both media models and peers (cf. Hoffner & Buchanan, 2005). In light of our results, it seems also important to investigate in more detail how media and peers interact in establishing idealized images and control beliefs in reaching such ideals. Finally, the use of the YouTube-format with online peer comments seemed an ecologically valid approach and worked well in this study (also see Konijn et al., 2013). Further testing this format in future research would be worthwhile, including variations of peer comments to the images.

In studying different senders of information in closer detail, future research may focus on comparing peers as close friends (also: same-gender, other-gender) vs. experts (such as dieticians, family doctors) vs. celebrity role models vs. no particular sender of information. Such a study should also control for perceived reliability of the presented source of the information and include no-information control-conditions to more explicitly test the role of the information as such.

In sum, our results provide important new insights into the combined effects of peer feedback and thin-body ideal media images. In extending previous research showing normalization and counteracting effects of adding information to thin-ideal body images, the present study revealed an idealization effect of peers providing feedback on media models. That is, when peers expressed that an extremely thin model was just ‘3kg-underweight’, the body status of the model apparently was perceived as an attainable but not yet obtained ideal, thereby inducing increased negative self-perceptions. Thus, the effects of exposure to thin-body ideals depend largely on how peers comment on them, particularly for girls who already were in the vulnerable position of experiencing high appearance schematicity. Those individuals probably are most susceptible to being primed by thin-ideal images. Results highlight the importance of considering the role of peers as well as individual predispositions in view of understanding how thin-ideal media images may impact adolescent girls’ body image concerns. Peer communication and personal factors may thus effectively negotiate detrimental effects of thin-body ideal media images, especially in girls who strongly process appearance relevant information.
Acknowledgements

We are very grateful to the pupils and school councils that generously supported us to conduct this study. We also would like to thank Rianne van der Veen for her support in developing and pre-testing the materials, as well as in data collection. Furthermore, we would like to express our gratitude to the editor dr. Nancy Zucker, anonymous reviewers, and dr. Christopher Ferguson for their highly constructive and competent feedback on an earlier draft of this ms.
References


Appendix. Example of YouTube Stimulus

Note. All information presented at this website screenshot has been created and developed for research purposes only.