

# Children's Attitudes and Stereotype Content Toward Thin, Average-Weight, and Overweight Peers

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## Abstract

Six- to 11-year-old children's attitudes toward thin, average-weight, and overweight targets were investigated with associated warmth and competence stereotypes. The results showed positive attitudes toward average-weight targets and negative attitudes toward overweight peers: Both attitudes decreased as a function of children's age. Thin targets were perceived more positively than overweight ones but less positively than average-weight targets. Notably, social desirability concerns predicted the decline of anti-fat bias in older children. Finally, the results showed ambivalent stereotypes toward thin and overweight targets—particularly among older children—mirroring the stereotypes observed in adults. This result suggests that by the end of elementary school, children manage the two fundamental dimensions of social judgment similar to adults.

## Keywords

body size, children, attitudes, stereotype, warmth, competence.

## Introduction

Body weight appears to be an attribute that is increasingly acquiring social importance. This phenomenon may be influenced by the escalating global epidemic of overweight and obesity, which affect both children and adults (World Health Organization, 2013), and society's obsession with a thin body image (Dittmar, 2007). Children's attitudes toward body size have been the object of several studies, most of which have focused on overweight figures and a few of which have considered thin figures. A robust body of evidence has shown that children display negative attitudes toward obesity (e.g., Brylinsky & Moore, 1994; Cramer & Steinwert, 1998; Penny & Haddock, 2007a; Powlishta, Serbin, Doyle, & White, 1994; Staffieri, 1967), whereas findings concerning attitudes toward thinness are inconclusive. Some research has found that children hold negative attitudes toward thin targets, who are generally seen as being socially submissive (Staffieri, 1967). Other studies have emphasized mixed attitudes characterized by ascriptions of socially desirable traits and negative physical features (Brylinsky & Moore, 1994). More recent studies have shown that thin figures are perceived as positively as average-weight figures (Cramer & Steinwert, 1998; Musher-Eizenman, Holub, Barnhart Miller, Goldstein, & Edwards-Leeper, 2004). Although research has shown that children's attitudes toward fatness have worsened over the past 50 years (e.g., Latner & Stunkard, 2003), it is argued that children's attitudes toward thinness may have become more positive (Thelen, Powell, Lawrence, & Kuhnert, 1992).

The recent increase in the prevalence of eating disorders in Western societies emphasizes a paradox: Whereas the population is generally heavier, the mass media disseminate an image of unrealistic thinness and simultaneously convey stigmatized images of overweight individuals (Solbes & Enesco, 2010). Smolak (2004) noted that media influences appear to affect body image by late elementary school, and the internalization of the societal standards of thinness is considered to be a risk factor for body image disturbance and eating pathology (Thompson & Stice, 2001). Relatedly, overweight children who perceive weight-based discrimination are more likely to engage in binge-eating and unhealthy weight-related behaviors compared with average-weight peers (Puhl & Heuer, 2010). Therefore, both belief types may increase social pressure on children, thus affecting their social interactions and self-perceptions and leading to more eating disorders. Thus, investigating children's body size attitudes appears particularly relevant. The present study examines attitudes toward thin, average-weight, and overweight figures among 6- to 11-year-old children.

Overall positive and negative attitudes toward specific body types may obscure more notable nuances if the content of such beliefs is not considered. The socio-psychological

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literature has widely documented the co-existence of both favorable and unfavorable beliefs, rather than simply dislike and antipathy, toward many social categories (e.g., Eagly & Kite, 1987; Eagly & Mladinic, 1989; Glick & Fiske, 1996, 2001; Katz & Hass, 1988). Remarkably, recent empirical evidence has shown that the content of group stereotypes is organized around two fundamental dimensions: warmth and competence (Fiske, Cuddy, & Glick, 2007). According to Fiske (2012), “evolution argues for the utility of [a] rapid category-based social judgment. People have to know whom to approach or avoid and for what purposes” (p. 34). Warmth and competence appear to be the two most crucial and adaptive aspects relevant to survival because warmth (e.g., friendliness, sincerity, trustworthiness, and sociability) reveals good or bad intentions, and competence (e.g., intelligence, skill, creativity, and efficacy) reveals the ability to act on those intentions.

More subtle and modern forms of prejudice are characterized by mixed combinations of these two basic dimensions; that is, groups are described as either competent or warm but not both (see Cuddy, Fiske, & Glick, 2008, for a review). Pertinently, recent research has shown mixed ascriptions of warmth and competence toward obese adults; that is, heavy individuals were rated as more warm than competent relative to lean individuals (Vartanian & Silverstein, 2013). However, to the best of our knowledge, research has not yet systematically investigated these dimensions on children’s stereotypes. Therefore, the present study also explores children’s warmth and competence stereotypes concerning body weight to qualify the valence of these attitudes.

## Children’s Body Size Attitudes

Overweight children suffer from severe stigmatization. These children are perceived as mean and undesirable playmates (Cramer & Steinwert, 1998) who possess more negative personality and behavioral traits (Sigelman, Miller, & Whitworth, 1986) and are less likely to be associated with positive abilities than average-weight children (Penny & Haddock, 2007a). Interestingly, these negative attitudes appear to be shared by children who are overweight themselves (Cramer & Steinwert, 1998; Holub, 2008; Staffieri, 1967). As a result, overweight children suffer from peer rejection (Harper, Wacker, & Cobb, 1986; Strauss, Smith, Frame, & Forehand, 1985), victimization (Adams & Bukowski, 2008), academic underachievement (Crosnoe & Muller, 2004; Taras & Potts-Datema, 2005), lower self-esteem (Klesges et al., 1992), and anxiety (Vila et al., 2004) more frequently than average-weight children.

Studies have shown that children’s anti-fat attitudes vary with age (e.g., Brylinsky & Moore, 1994; Cramer & Steinwert, 1998; Powlishta et al., 1994). The variations observed by researchers are consistent with those suggested by cognitive-developmental theory (Aboud, 1988, 2003) regarding the development of children’s ethnic prejudice. At

the pre-school level, children focus on the external attributes of individuals and make global, gross distinctions based on familiar versus unfamiliar characteristics. These “like me” and “not like me” categories (Sigelman et al., 1986) peak at approximately 5 to 8 years old and lead to a clear-cut preference for the ingroup over the outgroup. At approximately 8 to 9 years old, children increasingly perceive intra-group differences and inter-group similarities, which allow them to consider other people’s perspectives, thus attenuating their ingroup preference and outgroup dislike. However, many scholars have argued that this decline may simply involve a social desirability concern; that is, older children may be more aware of what is socially unacceptable and may thus be less overtly biased (e.g., Brown, 2010; Rutland, 2004).

Consistent with Aboud’s theory, children between 5 and 8 years old are generally more biased toward overweight peers than 9- to 11-year olds (e.g., Penny & Haddock, 2007a, 2007b). This result is most likely because older children have more developed reasoning skills. However, it is not obvious whether such reasoning skills help older children appreciate overweight peers’ perspectives or help them become more aware of how they are perceived by others and by understanding that discrimination is wrong, are less likely to be openly biased. A recent meta-analysis (Raabe & Beelmann, 2011) integrating 90 years of research on ethnic, racial, and national prejudices has shown that the increase in prejudice between early and middle childhood (2-7 years old) can be regarded as a typical developmental change “because it is a persistent finding that was obtained independently of contact opportunities, and the divergent operationalizations of prejudice . . . , across a large pool of studies from different social contexts” (p. 1729). By contrast, the decrease that occurs between middle and late childhood (7-10 years old) is affected by the measurements used in the studies. More specifically, Raabe and Beelmann (2011) observed an age-related change on explicit but not implicit attitudes. This result appears consistent for anti-fat attitudes. Solbes and Enesco (2010) investigated such attitudes at the explicit and implicit levels in 6- to 11-year-old children. The results showed that as children age, they appear to reduce their levels of explicit prejudice but not implicit bias.

Some results have also suggested that anti-fat attitudes are gender-related. Although some studies have observed no gender differences (e.g., Brylinsky & Moore, 1994; Solbes & Enesco, 2010; Stager & Burke, 1982), others have shown that overweight females are more stigmatized than their male peers (e.g., C. S. Crandall, 1995; Phillips & Hill, 1998) and some evidence indicates that girls show stronger anti-fat attitudes than boys (Cramer & Steinwert, 1998; Sigelman et al., 1986). Penny and Haddock (2007b) investigated the *mere proximity* effect (i.e., average-weight individuals are denigrated when placed next to overweight individuals rather than average-weight individuals; Hebl & Mannix, 2003) in 5- to 10-year-old children. Such an effect occurred in

children as young as 5 years old and was likely to occur when evaluations were made on female targets.

According to Smolak (2004), “body image is a strongly gendered phenomenon” (p. 21). In her review of the literature, Smolak noted that the incidence of body dissatisfaction is similar in male and female adolescents, but not in children younger than approximately 11 years old (see also Tang-Péronard & Heitmann, 2008). Young boys appear to be less concerned about their bodies compared with their female counterparts. For example, Pine (2001) found that the ideal female figure selected by girls (5- to 11-year-olds) was significantly thinner compared with the ideal male figure chosen by boys. Furthermore, when asked to select the figure they aspired to be as an adult, girls expressed higher preferences for the thinner figure. Young girls appear to be under a greater pressure to achieve a particular body type, particularly in contemporary Western societies. Building on the objectification theory (Fredrickson & Roberts, 1997), Smolak argued that

while the male body is viewed as agentic and active, the female body is an object to be looked at, particularly by men. The function of women’s bodies, then, is to be attractive, to be sexually pleasing to men. Girls learn this lesson early with messages coming from media, peers, and parents [which are more consistently directed toward girls than boys] (p. 22).

Considering the above evidence, the present study explores 6- to 11-year-old children’s attitudes toward thin, average-weight, and overweight figures with the following aims: to replicate previous results concerning obesity, namely, a stronger anti-fat bias in younger children compared with older children; to shed new light on attitudes toward thinness; and to deepen the role of gender in both types of attitudes. In addition, we investigated social desirability concerns to account for the predicted decline of anti-fat attitudes in older children (i.e., fifth grade).

## Stereotype Content

According to Penny and Haddock (2007a), extensive research has been carried out to establish the content of obesity stereotypes held by adults, whereas much less attention has been devoted to children’s stereotypes of overweight children. Furthermore, no research has systematically investigated children’s stereotype content regarding thin, average-weight, and overweight figures in terms of warmth and competence, which are considered to be the fundamental dimensions of social judgment (see Abele, Cuddy, Judd, & Yzerbyt, 2008). These dimensions are often observed in ambivalent combinations; that is, groups are perceived as warm or competent but not both (Fiske et al., 2007; Fiske, Cuddy, Glick, & Xu, 2002). These ambivalent combinations are consistent with the compensation hypothesis (Judd, James-Hawkins, Yzerbyt, & Kashima, 2005) that states that

a compensatory process occurs when one is judged more positively on one dimension (either warmth or competence) than on the other. Thus, people attempt to “rectify this disparity [on one dimension] by asserting that the situation must be reversed on the other dimension of social judgment” (Judd et al., 2005, p. 910). These trade-offs of warmth and competence are led by a compensatory motive that operates when the judgments of individuals or groups are generated in a comparative context (see Kervyn, Yzerbyt, & Judd, 2010 for a review). Ambivalent combinations of warmth and competence are pervasive in social judgments because they are functional and depict individuals or groups as possessing counterbalanced good and bad qualities to maintain a sense of justice (see Judd et al., 2005; Kay & Jost, 2003).

Studies have shown that overweight children are believed to be less intelligent, lazier, and less academically successful compared with their average-weight peers (e.g., Cramer & Steinwert, 1998; Hill & Silver, 1995; Musher-Eizenman et al., 2004; Penny & Haddock, 2007a; Tiggemann & Anesbury, 2000). By contrast, thin children are perceived as kinder, cleverer, and friendlier than overweight children (e.g., Brylinsky & Moore, 1994; Wardle, Volz, & Golding, 1995). Altogether, the existing research appears to indicate that warmth and competence may underlie children’s stereotypes. However, little is known about how these two dimensions are combined with reference to specific body types.

As noted, a recent contribution has shown that overweight adults were rated as more warm than competent relative to lean adults (Vartanian & Silverstein, 2013). In a related research domain, Barg, Armstrong, Hetz, and Latimer (2010) investigated the stigma that able-bodied adults have toward children with a physical disability in terms of warmth and competence. People with disabilities are perceived cross-culturally as more warm than competent (Cuddy et al., 2009; Durante et al., 2013). Pity, sympathy, and disrespect are generally directed toward individuals stereotyped in such a manner (Cuddy et al., 2008; Fiske et al., 2002). Barg et al. argued that “stigma and the consequent reactions towards those with a disability may be explained by the qualitative differences in perceived warmth and perceived competence in the content of stereotypes held by society at large” (p. 372). Consequently, and according to the stereotype content model’s predictions (cf. Fiske et al., 2002), improving perceived competence may reduce the stigma that is directed toward individuals with disabilities. The results showed that by boosting perceptions of competence of a child with physical disabilities (i.e., portraying him or her as being active), he or she was rated as more competent than an able-bodied child.

Therefore, are children’s anti-fat attitudes just negative (as the literature appears to suggest) or are negative evaluations on one dimension compensated by positive evaluations on the other dimension? Because “not all stereotypes are alike” (Fiske et al., 2002), we aim to broaden previous research on children’s body size attitudes by considering the related stereotype content in terms of warmth and

competence and establishing the combination of these dimensions for each body type. Based on the research of Barg et al. (2010), identifying different warmth and competence combinations might help when designing appropriate intervention programs to reduce weight bias.

## Method

### Participants

Children ( $N = 158$ , 79 males, 79 females; 92.4% Italian) were recruited from elementary schools in Northern Italy. Letters describing the study and asking for consent were sent to the parents/guardians of all children. Only those children whose parents/guardians returned the signed consent form to the school participated in the study. The participants were taken from alternate school years (first, third, and fifth grade) to comprise three age groups: 50 participants (24 males and 26 females) between 6 and 7 years old ( $M_{\text{age}} = 6.35$  years), 55 participants (30 males and 25 females) between 8 and 9 years old ( $M_{\text{age}} = 8.37$  years), and 53 participants (25 males and 28 females) between 10 and 11 years old ( $M_{\text{age}} = 10.35$  years).

### Materials

Six cartoons were created using graphic computer software and were pasted onto  $16.5 \times 24$  cm white cardboard squares. Each cartoon represented a male or female thin, average-weight, or overweight child. Computer software allowed us to manipulate body weight changes while maintaining the stability of the other elements. The characters for each gender were identical except for body size: thin (3.9 cm wide), average-weight (5.4 cm wide), and overweight (9.2 cm wide). Measurements were taken at the widest part of the body. The children made their evaluations (except for the Social Desirability Scale; see below) using a 5-point scale. Each point of the scale was labeled appropriately (i.e., 1 = *not at all*, 2 = *a little*, 3 = *don't know*, 4 = *a lot*, 5 = *very much*) and included smiley faces graded from the most serious to the happiest. Both the cards and scale were pilot tested using a convenience sample of 18 children (8 males and 10 females) from 6 to 11 years old. The children were asked to order the cards from "the thinnest to the chubbiest" (or vice versa) to ensure that our stimuli conveyed different body weights. Furthermore, the children completed several practice questions (e.g., "How much do you like doing your homework?" "How much do you like ice cream?") to ensure that all children understood how to use the scale. Both the figures and scale were appropriate for the children's age groups and aims of the present study.

### Procedure and Measures

The participants were interviewed individually during the school day. A trained male experimenter conducted all

testing. After a brief period of social interaction, the children were familiarized with the scale through a few practice questions (as in the pilot study), and the experimenter ensured that they understood how to use it. The experimenter then randomly presented the six figures one at a time giving the children the ability to rate each figure the same way.

**Attitude toward body size.** For each figure, the participants were asked the following three questions: "How much do you like this boy/girl?" "How much would you like to have him/her as a friend?" and "How much would you like to have him/her as a desk partner?" The reliability for each target figure within each age group was satisfactory (alphas between .66 and .87; median = .77).

**Stereotype content.** Next, the participants were again presented with the target figures one at a time in random order and were asked to evaluate each figure for competence and warmth. Two items were used for each dimension: "How much do you think this boy/girl is intelligent/good at school?" (i.e., competence) and "How much do you think this boy/girl is kind/amusing?" (i.e., warmth). The warmth and competence reliabilities calculated for each target figure within each age group were generally sufficient (competence median  $\alpha = .68$ ; warmth median  $\alpha = .70$ ).

Finally, the children were asked to order the figures from "the thinnest to the chubbiest" (or vice versa) to ensure that they were able to discriminate between different body sizes.<sup>1</sup> None of the participants failed this task.

**Social desirability.** At the end of the session, only the fifth-grade children were presented with a true-false, 12-item response format questionnaire to measure social desirability. We used a short form (Short-Form B) of the Crandall Social Desirability Test for Children (CSDTC; V. C. Crandall, Crandall, & Katkovsky, 1965) implemented by Carifio (1994). The items were translated and adjusted for the Italian context. Examples include the following: "I would never hit anyone who was smaller than I am" and "Sometimes I feel like staying home from school even if I'm not sick." The reliability was sufficient ( $\alpha = .65$ ). The participants' responses were coded and aggregated to form a reliable social desirability index (ranging from 0 to 12) with higher scores indicating higher social desirability concerns.

## Results

### Attitude Toward Body Size

The items were averaged to form reliable scores for each target figure. A 2 (Participant Gender)  $\times$  3 (Age Group)  $\times$  2 (Target Gender)  $\times$  3 (Target Weight) mixed ANOVA was performed with the last two factors serving as within-participants factors. The results showed two significant main effects. First, a Target Weight main effect,  $F(2, 304) =$

**Table 1.** Attitudes Toward Body Size as a Function of Age Group and Target Weight.

Age group	Target weight		
	Thin	Average weight	Overweight
First grade	3.40	4.05 <sub>b</sub>	2.00 <sub>c</sub>
Third grade	3.35 <sub>a</sub>	3.78 <sub>b</sub>	2.58 <sub>c</sub>
Fifth grade	3.17 <sub>a</sub>	3.76 <sub>c</sub>	2.80 <sub>b</sub>

Note. Means are on a 5-point scale: 1 = not at all and 5 = very much. Within each column and row, the different subscript indicates that the means are different,  $p < .05$ .

229.41,  $p < .001$ ,  $\eta^2 = .60$ : Average-weight figures ( $M = 3.86$ ,  $SD = 0.60$ ) were the most positively evaluated followed by thin figures ( $M = 3.31$ ,  $SD = 0.72$ ), leaving the overweight figures as the least liked ( $M = 2.47$ ,  $SD = 0.88$ ). All three means significantly differed from the midpoint of the scale,  $t(157) > 5.30$ ,  $ps < .001$ . Second, a Target Gender main effect,  $F(1, 152) = 5.79$ ,  $p < .05$ ,  $\eta^2 = .04$ , indicating that male figures ( $M = 3.28$ ,  $SD = 0.69$ ) received higher evaluations than female figures ( $M = 3.15$ ,  $SD = 0.78$ ).

The results also revealed three significant two-way interactions. First, Age Group  $\times$  Target Weight,  $F(4, 304) = 15.28$ ,  $p < .001$ ,  $\eta^2 = .17$ , indicated that the three body sizes were evaluated differently according to the participants' age, which was expected. Simple effects<sup>2</sup> revealed significant differences in the evaluations of both overweight,  $F(2, 152) = 12.62$ ,  $p < .001$ ,  $\eta^2 = .14$ , and average-weight figures,  $F(2, 152) = 4.47$ ,  $p < .05$ ,  $\eta^2 = .06$ . Table 1 shows that the evaluations of overweight targets became more positive from younger to older children, although third- and fifth-grade children's ratings did not differ significantly. Similarly, first-grade children evaluated average-weight figures more positively compared with both third- and fifth-grade children. Notably, the evaluations of thin targets did not vary according to the participant's age,  $F(2, 152) = 1.64$ ,  $p = .20$ . Finally, within each age group, average-weight figures were the most liked followed by thin and overweight figures ( $F_s > 38.7$ ,  $ps < .001$ ,  $\eta^2_s > .34$ ).

Second, there was a significant interaction between the participant's and target's gender,  $F(1, 152) = 162.34$ ,  $p < .001$ ,  $\eta^2 = .52$ , which indicated that the participants preferred targets of their own gender (see Table 2).

The third significant interaction was Target Gender  $\times$  Target Weight,  $F(2, 304) = 8.34$ ,  $p < .001$ ,  $\eta^2 = .05$  (see Table 3). Simple effects showed that average-weight and overweight female targets, in particular, were rated less favorably than average-weight and overweight male targets: average-weight targets,  $F(1, 152) = 6.41$ ,  $p < .05$ ,  $\eta^2 = .04$ ; overweight targets,  $F(1, 152) = 17.27$ ,  $p < .001$ ,  $\eta^2 = .10$ . Again, no significant difference was observed for thin figures,  $F(1, 152) = 1.14$ ,  $p = .29$ .

The last two interactions were qualified by the three-way interaction of Participant Gender  $\times$  Target Gender  $\times$  Target

**Table 2.** Attitudes Toward Body Size as a Function of Participants' and Targets' Gender.

Participant gender	Target gender	
	Male	Female
Male	3.57	2.71 <sub>b</sub>
Female	2.99 <sub>b</sub>	3.57 <sub>a</sub>

Note. Means are on a 5-point scale: 1 = not at all and 5 = very much. Within each column and row, the different subscript indicates that the two means are different,  $p < .05$ .

**Table 3.** Attitudes Toward Body Size as a Function of Targets' Gender and Targets' Weight.

Target gender	Target weight		
	Thin	Average weight	Overweight
Male	3.26 <sub>a</sub>	3.96 <sub>b</sub>	2.62 <sub>c</sub>
Female	3.35 <sub>a</sub>	3.76 <sub>c</sub>	2.33 <sub>b</sub>

Note. Means are on a 5-point scale: 1 = not at all and 5 = very much. Within each column and row, the different subscript indicates that the means are different,  $p < .05$ .

Weight,  $F(2, 304) = 7.76$ ,  $p < .01$ ,  $\eta^2 = .05$ , which was dissected as a function of participant gender. Two repeated-measure ANOVAs were performed. For the male participants, the results showed significant Target Gender,  $F(1, 78) = 113.29$ ,  $p < .001$ ,  $\eta^2 = .59$ , and Target Weight,  $F(2, 156) = 84.92$ ,  $p < .001$ ,  $\eta^2 = .52$ , main effects, which replicated the results shown above. However, the interaction was non-significant,  $F(2, 156) = 2.01$ ,  $p = .14$ . The results for female participants showed significant main effects: Target Gender,  $F(1, 78) = 54.72$ ,  $p < .001$ ,  $\eta^2 = .41$ ; Target Weight,  $F(2, 156) = 106.61$ ,  $p < .001$ ,  $\eta^2 = .58$ ; and a Target Gender  $\times$  Target Weight interaction,  $F(2, 156) = 14.79$ ,  $p < .001$ ,  $\eta^2 = .16$ . Simple effects revealed that female participants attributed higher ratings to targets of their own gender (i.e., ingroup bias): thin,  $F(1, 78) = 56.28$ ,  $p < .001$ ; average-weight,  $F(1, 78) = 32.94$ ,  $p < .001$ ; and overweight,  $F(1, 78) = 4.13$ ,  $p < .05$ . However, the associated effect sizes ( $\eta^2 = .42$ ,  $\eta^2 = .30$ , and  $\eta^2 = .05$ , respectively) suggest that female participants were less biased toward their own gender in evaluating overweight targets (see Table 4).

### Social Desirability

Anti-fat attitudes declined as a function of participants' age. To investigate this decline, a regression analysis was performed in which overweight target ratings from fifth-grade children were regressed onto their social desirability scores. The results showed that social desirability predicted anti-fat attitudes ( $\beta = .35$ ,  $p < .05$ ,  $R^2 = .12$ ); that is, the higher the level of social desirability, the more positive the attitude

**Table 4.** Male and Female Attitudes Toward Body Size as a Function of Targets' Gender and Targets' Weight.

Participant gender	Target gender	Target weight		
		Thin	Average weight	Overweight
Male <sup>a</sup>	Male	3.58	4.30	2.82
	Female	2.84	3.28	2.04
Female	Male	2.94 <sub>a</sub>	3.62 <sub>b</sub>	2.41 <sub>c</sub>
	Female	3.87 <sub>c</sub>	4.23 <sub>a</sub>	2.61 <sub>b</sub>

Note. Means are on a 5-point scale: 1 = *not at all* and 5 = *very much*. Within each column and row, the different subscript indicates that the means are different,  $p < .05$ .

<sup>a</sup>For male participants, simple effects are not reported because the interaction between target weight and target gender was not significant.

**Table 5.** Stereotype Content as a Function of Dimension and Target Weight.

Target weight	Dimension	
	Competence	Warmth
Thin	3.85 <sub>b</sub>	3.55 <sub>c</sub>
Average weight	3.96 <sub>b</sub>	3.91 <sub>b</sub>
Overweight	3.16 <sub>a</sub>	3.58 <sub>c</sub>

Note. Means are on a 5-point scale: 1 = *not at all* and 5 = *very much*. Within each column and row, the different subscript indicates that the means are different,  $p < .01$ .

toward overweight targets. Our results also showed the expected decline in preference for average-weight targets among older children. However, social desirability did not predict such a decline in fifth-grade children ( $\beta = .20$ ,  $p = .15$ ).

### Stereotype Content

Warmth and competence items were averaged to form reliable scores. To explore the existence of ambivalent stereotype content in children, a 3 (Age Group)  $\times$  3 (Target Weight)  $\times$  2 (Dimension) mixed ANOVA was performed with the last two factors serving as within-participants factors.<sup>3</sup> We were especially interested in the warmth and competence combination for each body size and in their variations, if any, according to children's age. The results showed a significant Target Weight main effect,  $F(2, 310) = 59.37$ ,  $p < .001$ ,  $\eta^2 = .28$ ; Age Group  $\times$  Target Weight,  $F(4, 310) = 5.81$ ,  $p < .001$ ,  $\eta^2 = .07$ ; and Age Group  $\times$  Dimension interactions,  $F(2, 155) = 3.55$ ,  $p < .05$ ,  $\eta^2 = .04$ . Most relevantly, we found a significant Target Weight  $\times$  Dimension interaction,  $F(2, 310) = 38.83$ ,  $p < .001$ ,  $\eta^2 = .20$ . Simple effects revealed that warmth and competence ratings differed significantly for thin,  $F(1, 155) = 23.66$ ,  $p < .001$ ,  $\eta^2 = .13$ , and overweight,  $F(1, 155) = 40.70$ ,  $p < .001$ ,  $\eta^2 = .21$ , figures. Table 5 shows

that thin targets were judged as more competent than warm, whereas overweight targets were judged as more warm than competent. Notably, average-weight targets were rated as both competent and warm,  $F < 1$ . Furthermore, the simple effects associated with the two dimensions showed that overweight figures were evaluated as the least competent,  $F(2, 154) = 76.11$ ,  $p < .001$ ,  $\eta^2 = .50$ , whereas average-weight targets were judged as the warmest,  $F(2, 154) = 22.52$ ,  $p < .001$ ,  $\eta^2 = .23$ . The other comparisons for each dimension were not significant.

The relevant three-way Age Group  $\times$  Target Weight  $\times$  Dimension interaction was not significant,  $F(4, 310) = 1.44$ ,  $p = .22$ . However, it is possible that different directions in the warmth and competence evaluations for each target weight in each age group could have canceled each other out, thus leading to a non-significant three-way interaction. Therefore, we further investigated the possibility of compensation in different dimensions at different ages by comparing the warmth and competence means for each body size within each age group. The results for the first-grade children showed that thin targets were perceived as more competent ( $M = 3.90$ ,  $SD = 0.82$ ) than warm ( $M = 3.53$ ,  $SD = 0.86$ ),  $t(49) = 3.58$ ,  $p < .01$ , whereas the remaining comparisons were non-significant ( $ts < 1.25$ ,  $ps > .20$ ). The third-grade children's warmth and competence attributions differed significantly only for the overweight targets, who were rated as more warm ( $M = 3.74$ ,  $SD = 0.74$ ) than competent ( $M = 3.15$ ,  $SD = 0.91$ ),  $t(54) = 4.83$ ,  $p < .001$ . Finally, fifth-grade children evaluated thin figures as more competent ( $M = 3.80$ ,  $SD = 0.53$ ) than warm ( $M = 3.42$ ,  $SD = 0.66$ ),  $t(52) = 3.74$ ,  $p < .001$ , and overweight targets as more warm ( $M = 3.77$ ,  $SD = 0.74$ ) than competent ( $M = 3.23$ ,  $SD = 0.76$ ),  $t(52) = 4.85$ ,  $p < .001$ . The average-weight targets were evaluated as both competent and warm ( $t < 1$ ) at any age.

To identify the warmth and competence Italian cultural stereotype associated with different body sizes, a brief questionnaire was administered to a convenience sample of 33 college students (29 females;  $M_{age} = 20.31$ ,  $SD = 1.33$ ). The participants were asked to evaluate how intelligent and capable (i.e., competence) and how warm and friendly (i.e., warmth)<sup>4</sup> thin, average-weight, and overweight men and women were. The responses were made on 5-point scales, from 1 (*not at all*) to 5 (*very much*). The reliabilities were sufficient (competence  $\alpha = .63$ , warmth  $\alpha = .75$ ). A 3 (Target Weight)  $\times$  2 (Dimension) repeated-measures ANOVA showed a significant Target Weight main effect,  $F(2, 64) = 18.18$ ,  $p < .001$ ,  $\eta^2 = .36$ , and most importantly, a significant Target Weight  $\times$  Dimension interaction,  $F(2, 64) = 49.09$ ,  $p < .001$ ,  $\eta^2 = .61$ . Simple effects revealed that warmth and competence ratings differed significantly for thin,  $F(1, 32) = 32.92$ ,  $p < .001$ ,  $\eta^2 = .51$ , and overweight,  $F(1, 32) = 39.55$ ,  $p < .001$ ,  $\eta^2 = .55$ , targets as was previously observed. The means reported in Table 6 show that the participants attributed more competence than warmth to thin targets and more warmth than competence to overweight targets, whereas average-weight targets were judged as both competent and

**Table 6.** Stereotype Content as a Function of Dimension and Target Weight: Adult Sample.

Target weight	Dimension	
	Competence	Warmth
Thin	3.25	2.54
Average weight	3.41 <sup>ab</sup>	3.34 <sup>d</sup>
Overweight	3.08 <sup>a</sup>	3.88 <sup>c</sup>

Note. Means are on a 5-point scale: 1 = *not at all* and 5 = *very much*. Within each column and row, the different subscript indicates that the means are different,  $p < .01$ .

warm ( $F < 1$ ). Finally, the means for warmth all differed significantly,  $F(2, 31) = 33, p < .001, \eta^2 = .68$ , with overweight targets receiving the highest evaluations. Only average-weight and overweight targets differed in the competence dimension,  $F(2, 31) = 6.80, p < .01, \eta^2 = .31$  (cf. Vartanian & Silverstein, 2013).

## Discussion

The results showed that children of all ages differentiated among the three body sizes. Children held the most positive attitude toward average-weight targets and the most negative attitude toward overweight targets. Attitudes toward thin targets appeared to be more positive than those toward overweight figures but not as positive as attitudes toward average-weight targets. Both the preference for average-weight and the dislike for overweight children decreased from first- to fifth-grade children. However, social desirability concerns appear to be involved in the decline of the anti-fat attitude, at least among fifth-grade children. Finally, consistent with Brylinsky and Moore's (1994) findings, attitudes toward thin targets did not vary according to children's age.

Concerning gender, we found that children favored their own gender, as reported in previous studies (e.g., Penny & Haddock, 2007b; Powlishta, 1995). However, average-weight and overweight female targets, in particular, were evaluated less favorably than their male counterparts. Notably, although female participants preferred figures of their own gender, this ingroup bias was less prominent in their evaluations of the overweight female target. This result appears in line with previous findings showing stronger anti-fat attitudes in girls than boys (e.g., Cramer & Steinwert, 1998; Sigelman et al., 1986). We did not observe a stronger preference for thin figures among girls compared with boys.

In summary, there were neither gender nor age differences for the thin targets, but we found age differences for both average-weight and overweight targets as well as indications of stronger anti-fat attitudes toward female overweight targets. These results are not only consistent with previous research but also extend it in several respects. First, we assessed attitudes toward thinness as well as fatness. The

majority of previous studies considered only two body types: either thin or average-weight and overweight. The present study assessed children's attitudes toward three body types and found that average-weight is the most liked body size, but thinness is always preferred over fatness. Furthermore, we did not adopt a forced-choice paradigm, but the children had the option to rate each figure in the identical manner. Therefore, it is unlikely that the biases observed here are merely the effects of the methodology used. Second, we shed new light on the role of gender in the anti-fat prejudice, thus showing that although children preferred targets of their own gender, the female overweight target was more stigmatized and did not benefit from the gender ingroup bias as much as its male counterpart.

Third, our results demonstrated that social desirability concerns play a role in the decline of anti-fat attitudes among older children. Similar to recent arguments for racial, ethnic, and national prejudices (see Raabe & Beelmann, 2011), this result supports the idea that as age increases, children become more aware of what is socially desirable and modulate their responses to appear more positive and less biased. Our findings are also consistent with Solbes and Enesco's (2010) results on implicit versus explicit weight bias. However, social desirability did not account for the diminished preference toward average weight found among older children, lending support to cognitive theories (e.g., Aboud, 1988).

The aforementioned results have established the positivity/negativity of children's body size attitudes. However, results concerning stereotype content showed that such attitudes are more sophisticated than simply liking or disliking specific body types. In fact, although children perceived overweight targets as the least competent, they appeared to compensate in the warmth dimension, attributing higher warmth than competence to these targets. Similarly, thin figures were judged as more competent than warm, whereas average-weight targets were judged as both competent and warm. These compensation versus halo effects (see Rosenberg, Nelson, & Vivekananthan, 1968) are in line with what was argued by Fiske et al. (2002). According to these authors, the majority of groups' stereotypes are ambivalent, but reference groups and ingroups are generally perceived as possessing both warmth and competence. In the present research, and consistent with the findings of previous studies on the anti-fat prejudice, average-weight targets represent the favorite body type. The majority of children identified with the average-weight figures (i.e., ingroup; see Note 1). Therefore, it is not surprising to find a univalent (only positive) stereotype toward average-weight figures.

Our results concerning the more-warm-than-competent overweight stereotype are in line with the findings of Penny and Haddock (2007a) who investigated the same stereotype in terms of athletic, artistic, academic, and social abilities. The last two domains may be considered equivalent to competence and warmth, respectively. Although these authors used a different methodology, they found that compared with

average-weight characters, children between 5 and 8 years old were less likely to associate overweight characters with academic ability, whereas children from 9 to 10 years old attributed greater social abilities to overweight characters. The present work supports and extends these results by examining how the two fundamental dimensions of social judgment are relative to one another in children's stereotypes by assessing the stereotype content of three body types and by demonstrating the presence of ambivalent stereotypes in children. Children's attributions of warmth and competence to thin, average-weight, and overweight targets mirrored those of adults (both in the present research and in Vartanian & Silverstein, 2013), and the evidence of an age trend suggests that by the end of elementary school, children seem to manage the two fundamental dimensions of social judgment as adults do.

### Implications

The present study has important theoretical and practical implications. First, our findings concerning the relationship between the decline of anti-fat attitudes and social desirability concerns in fifth graders are consistent with previous results, indicating that strong negative biases toward overweight peers persist during pre-adolescence (e.g., Enesco, Guerrero, Callejas, & Solbes, 2010). Furthermore, overweight and obese individuals experience prejudice and discrimination in every area of their lives, and according to Johnston (2012), "Weight-based discrimination is on the rise and remains a socially acceptable form of discrimination" (p. 452; see also Puhl & Heuer, 2010).

All these results emphasize the need for age-appropriate interventions promoting prejudice reduction at overt and subtler levels. Raabe and Beelmann (2011) noted that the transition from middle to late childhood (7-10 years old) is a sensitive period for environmental influences on prejudice. These authors suggested contact-based interventions together with a stronger and more direct communication of anti-prejudice and egalitarian norms as strategies to reduce ethnic prejudice. We believe that such strategies could also be effective to address negative weight-based attitudes in children. For example, Hansson and Rasmussen (2010) also found that one of the predictors of the obesity stereotype in 10-year-old children was parental body size; that is, children showed stronger obesity stereotypes with decreasing parental body size. Relying on the contact hypothesis (Allport, 1954) which states that frequent interactions with outgroup members may improve negative attitudes, both toward the outgroup member that one interacts with and toward the entire outgroup, the authors argued that a possible explanation for their result "is that children with larger parents realize that body size has little or nothing to do with certain behaviours or characteristics, and are therefore less disposed to stereotype" (Hansson & Rasmussen, 2010, p. 31).

Second, the more-warm-than-competent overweight stereotype observed in the present study provides us with some

indications of which stereotypical dimension we should focus on when designing an intervention. The study by Barg et al. (2010) on the stigma toward children with physical disabilities (also stereotyped as more warm than competent) has shown that improving perceived competence may reduce the stigma directed toward such individuals. Therefore, contact-based, competence-oriented early interventions are essential, especially considering the recent results that show that the warmth and competence stereotypes may constrain and direct outgroups' behavior interpretations (Richetin, Durante, Mari, Perugini, & Volpato, 2012).

### Limitations and Future Directions

The present study has some limitations that should be addressed in future studies. First, the social desirability measure was only administered to 5th-grade children. The CSDTC (V. C. Crandall et al., 1965) was tested with 3rd to 12th graders, but the short form used here was validated by Carifio (1994) with 10-year-old and older children. Therefore, it was not appropriate to administer the test to younger children. Because in our results 3rd- and 5th-grade children did not differ in their evaluations of the overweight targets, to deepen the role that social desirability plays in children's anti-fat attitude at different ages, future research should consider and develop other instruments to investigate the developmental pattern of such a construct. Similarly, the decline in the average-weight preference should be further investigated. In fact, it is plausible to assume that as children become more aware of social norms (e.g., modesty), ingroup preference might consequently decrease.

Second, although consistent with previous results (Brylinsky & Moore, 1994), we did not observe a preference for thin targets in either boys or girls, which is inconsistent with what has been observed in the body image and dissatisfaction literature. This inconsistency may be because the incidence of body dissatisfaction is not obvious in children younger than 11 years old (Smolak, 2004; Tang-Péronard & Heitmann, 2008). However, because previous studies have shown that young children display an awareness of dieting messages (e.g., Holub et al., 2005) and cultural standards for beauty prior to puberty (e.g., Smolak, 2004), it is plausible to assume that little girls in particular may not be immune to these influences. Harriger, Calogero, Witherington, and Smith (2010) noted that researchers "have documented that the current ideal body type for women is not only thin, but a 'curvaceously thin' body shape"; therefore, it "is not simply a matter of attaining a low body weight but also having the necessary fat distribution in certain areas (e.g., breasts, buttocks) to achieve the desired body proportions" (p. 610). Similarly, the ideal male body type has muscles (see Kelley, Neufeld, & Musher-Eizenman, 2010). The stimuli used in the current research portrayed children; therefore, there were no curves on the girls and no muscles on the boys. Consequently, expressing a preference for average-weight figures does not clarify the ideal body type that children



might want to achieve as adults, which could affect their eating behaviors more than their attitudes toward thin peers. Specifically designed studies are necessary to address this problem.

Relative to the stimuli, the difference in width between the three body weights may be considered a further limitation. In fact, thin and average figures differed by 1.5 cm, whereas the difference between the average- and overweight figures was more than 3 cm. However, in the pilot study, 6- to 11-year-old children were able to order the cards from “the thinnest to the chubbiest” (or vice versa), and in the main study, the participants preferred average-size figures to both thin and overweight figures. These results indicated that children were able to categorize the figures according to their weight. However, more constant and systematic changes in body weight should be used in building stimuli for future studies.

Fourth, we did not measure the participants’ height and weight. However, the research suggests that anti-fat attitudes appear to be shared by children and adults who are overweight themselves (Cramer & Steinwert, 1998; Holub, 2008), and perceived body size seems to be a better predictor of such attitudes (Solbes & Enesco, 2010). Note 1 indicates that we controlled for perceived body size by asking the children to select the child that they looked most similar to from the six figures. The results showed that the majority of children of all ages chose the average-weight figure. Future research should address both issues more carefully with a larger and more heterogeneous sample.

Finally, concerning the stereotype content, to our knowledge, this is the first study showing that ambivalent combinations of warmth and competence characterize children’s stereotype content. Although there is no reason to expect that these findings should operate differently in other social categories or nations, future research should extend these results by considering other types of targets (e.g., ethnic, gender groups) in other countries. Furthermore, future studies should experimentally establish compensation processes in children, such as by using stories of fictitious individuals and manipulating one dimension at a time to determine how the attributions on the other dimension change as a consequence. This could be done with children of different ages to verify the age pattern observed here.

## Conclusion

Previous research exploring children’s anti-fat biases has mostly focused on the valence of the attitude. The results of the current study show that although children hold a negative attitude toward their overweight peers, the associated stereotype content is ambivalent, and positive and negative beliefs co-exist. Especially in children around 10 years of age, the fact that overweight targets are penalized in one dimension (i.e., competence) but are compensated in the other (i.e., warmth), in addition to the results concerning social desirability, highlights children’s ability as social perceivers.

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## Notes

1. Children’s body size perceptions were also assessed as a supplementary control measure. The children were asked to choose which child they most looked like from the six figures. The results showed that the participants always chose a same-gender figure, typically the average-weight figure; namely, male participants: first grade 79.2%, third grade 83.3%, and fifth grade 76%; female participants: first grade, 80.8%, third grade 76%, and fifth grade 85.7%.
2. All tests of simple effects used the Bonferroni correction for multiple comparisons.
3. For simplicity, the participants’ and targets’ genders were not entered in the ANOVA reported in the text because the initial analyses showed no relevant effects on the warmth and competence dimensions.
4. The traits have been extensively and cross-culturally pre-tested (e.g., Cuddy et al., 2009; Durante et al., 2013; Fiske, Cuddy, Glick, & Xu, 2002) to reflect the dimensions of warmth and competence.

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