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Children's perceptions of body shape:
A thinness bias in
preadolescent girls and
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Biography

Dr. Karen Pine is a Developmental Psychologist and Research Fellow in Psychology at the University of Hertfordshire. She has carried out research in a number of areas of child development particularly children's cognitive representations, body image and the development of science concepts.

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Children's perceptions of body shape: A thinness bias in preadolescent girls and associations with femininity.

Keywords: Thinness - Body image - Anorexia Nervosa - Dieting - Femininity

Abstract

Despite research documenting the body image concerns of adolescent females, and the association with eating disorders, less is known about children's perceptions of body shape or the developmental roots of adolescent concerns. This study, involving 140 children aged 5 to 11, explored what children think is the ideal shape for an adult male and female and whether body shape is related to masculinity and femininity. Children saw a range of figures from very thin to very fat and were asked which they thought was 'the nicest shape for a lady (or man) to be'. Girls and boys agreed about what is the ideal male shape, but differed in their perception of the ideal female shape from as early as five years old. Girls selected an ideal female figure which was significantly thinner than that chosen by boys, and the girls also aspired to a thinner figure for themselves. Girls as young as nine, though not overweight, admitted they were dieting. Also 61% of 11 year old girls said their mothers dieted compared to only 12% of boys. Significantly more stereotypically feminine traits were associated with a thinner female figure than with a fatter one, whilst masculine traits were not associated with any particular male somatotype. The findings suggest that to be feminine, a female has to be thin although males can be either thin or fat and still be considered masculine. The implications in terms of the distorted beliefs underlying eating disorder are discussed.

Introduction

The pursuit of thinness is a cultural ideal which has been increasingly adopted in the developed world over the last 20 to 30 years (Garner, Garfinkel, Schwartz & Thompson, 1980). Consequently, dieting is now a widespread behaviour, particularly among females (Marchi & Cohen, 1990; Lask & Bryant-Waugh, 1992; Hill et al, 1992, Hill, Draper & Stack, 1994). However, dieting is not always a harmless activity and it is now recognised as being associated with the onset of clinical eating disorders (Salmons, Lewis, Rogers, Gatherer & Booth, 1988; Hill, 1993). A feeling of dissatisfaction with one's body shape has been found to be the most reliable predictor of the outcome of eating disorders (Fairburn & Cooper, 1989), a problem which is most common among females in the 12 to 25 year age group, with males accounting for only 11% of cases (Toro, Castro, Garcia, Perez & Cuesta, 1989). Disturbingly, the age at which dieting is begun by girls has been shown to be as young as 9 years old (Hill, 1992; Hill et al., 1994) and there has been a corresponding increase in referrals for early onset anorexia nervosa (Lask & Bryant-Waugh, 1992). This raises questions, addressed here, about children's developing perceptions of body image, about why girls find thinness desirable and the age at which such concerns begin.

In 1983 Fallon and Rozin conducted a study to assess the attitudes toward body shape of male and female college students. They presented the students with a range of figures, from extremely thin to obese (see Figure 1), and asked them to indicate the figure:

- a) which they thought the opposite sex would find most attractive
- b) which they thought was the most attractive
- c) which they thought most resembled their own current shape.

For males, the three measures of their most attractive, the most attractive to the opposite sex and their current shape were almost identical. The responses of the females, however, were more variable. The female students thought a figure significantly thinner than their own would be most attractive to the opposite sex. Furthermore, the figure they viewed as their ideal shape was thinner still. Overall, Fallon and Rozin concluded, men's perceptions serve to keep them satisfied with their body shape. On the other hand, women's perceptions breed dissatisfaction and create pressure to lose weight, even in those who are not overweight.

Insert Figure 1 here

Fallon and Rozin's original study was replicated using younger children, aged from 10.5 to 15 years by Cohn et al. (1987). They found that early adolescent females also desired to be thinner than their current figure. Intriguingly, like the college students, these young females also expressed a desire to be thinner than the figure they considered was most attractive to boys. This suggests that the bias towards thinness is in place by the time girls reach adolescence but is not determined by what they think the opposite sex finds attractive, a finding supported more recently by the work of Tiggemann and Wilson-Barrett (1998). In a study of preadolescent children, Collins (1991)

administered a similar pictorial instrument including child figures, and found the bias towards thinness in females as young as 6 or 7 years. Collins concluded that '...girls learn long before puberty that beauty is a basic dimension of the feminine gender role' (1991, p.200). Two DSM-III-R criteria for anorexia nervosa, disturbance of body image and intense fear of becoming fat indicate how these cultural stereotypes are also embedded in the cognitions of the anorectic.

The present study investigates children's perceptions about body shape in children from age 5 to 11. By investigating how early the developmental roots of body concern are laid down we can gain insight into the developing gender schema of children, their receptivity to culturally sanctioned stereotypes and even early signs of the distorted beliefs which accompany anorexia nervosa. One possibility is that the bias towards thinness in girls begins as young as age 5, when Lerner and Gellert (1969) found an aversion to obesity. Or it may not develop until age 9, when girls have become more aware of cultural pressures and when Hill et al. (1992) found some girls begin dieting. However, given the evidence that the thinness culture is mainly targeted at females and dissatisfaction is greater amongst females (Worsley, 1981; Furnham & Radley, 1989; Toro et al., 1989), it is expected that girls, at a certain age, will begin to express a preference for a thinner female shape than boys.

The children used in this study were aged 5, 7, 9 and 11. One aim was to explore how early the bias towards thinness develops in females, and to draw comparisons with male perceptions of body shape. The children were shown the adult figures used by Fallon and Rozin (1983) and Cohn et al. (1987) (see Figure 1). They were asked which figure they thought was the 'nicest shape for a lady to be' and the 'nicest shape for a man to be'. A measure of the figure they aspired to was obtained by asking, 'Which one would you most like to look like when you are grown up?'. It was predicted that at an early age girls would select a thinner 'ideal' female figure than boys, would 'aspire to' a thinner figure, and that there would be increasing evidence for this bias towards thinness with age.

Several studies have attempted to address the question, why is thinness so appealing or obesity so unattractive? Whilst this is clearly a complex issue, research has shown that certain character traits are associated with body type, with more positive traits attributed to slimmer figures (Staffieri, 1972; Harris, Harris & Bochner, 1982; Furnham & Alabhai, 1983; Wardle, Volz & Golding, 1995). Wardle et al., for example, found that children perceive a thinner person as having more friends, being cleverer, kinder and prettier than a fatter person. Hill and Silver (1995) found that children associated obesity with poor social functioning, impaired academic success and low perceived health and fitness. However, the majority of these studies measure attitudes to obesity in general, rather than explore how these differ when the target is an overweight female or an overweight male.

Some studies have found that trait association patterns differ for males and females (Worsley, 1981; Deux & Lewis, 1984). On the trait of

`masculinity/femininity', for example, Harris et al. (1982) found that obese females are more negatively stereotyped than males of comparable size. Furthermore, positive traits are consistently attributed to males independent of body shape (Burdick & Tess, 1983) and a negative association between socioeconomic group and obesity is more marked for women than for men (Moore, Stunkard & Srole, 1962). This evidence that the association of positive traits with body shape is stronger for females than for males provides insight into some of the observed differences in body-shape preferences in young girls compared with young boys. It suggests that girls believe being overweight may compromise their femininity, which may account for higher female vulnerability to eating disorders, whilst for boys their masculinity is less affected by body size. In this study this was explored by asking children to ascribe typically female traits to either a fat or thin female figure, and typically male traits to a fat or thin male figure (Bem, 1974; Ruble, 1984).

It was also decided to pursue the motivational aspects of the children's perceptions about body shape with questions about whether the children would go on a diet. From this it would be possible to ascertain whether there was an association between children's subjective ratings of their own body shape and a motivation to diet, and whether girls were more likely to diet than boys. By asking the children if they knew anybody else who dieted, the influence of others' behaviour could also be given consideration. Since it has been suggested that the thinness culture is socially transmitted, and mothers' behaviour is particularly salient (Hill et al., 1990) a correlation between exposure to others who diet and a child's motivation to diet was expected. The children were also asked to give a rating of their own current shape, on a 5-point scale including average, too fat or too thin. If girls are subject to the cultural pressures of a desire for thinness and over-concern about body shape, they would be expected to express greater self-dissatisfaction than boys.

In summary, the study investigates whether the ideal female figure chosen by preadolescent girls' is thinner than that chosen by their male counterparts and whether young girls aspire to a thinner figure than boys. By measuring trait ascription to either a fat or thin male, and a fat or thin female, target figure the study also asks if, for these young children, masculinity-femininity is associated with a particular body shape for females, but not for males.

Method

Design

The study had a mixed design with gender and age as between subjects variables. Measures of `ideal' body shape ("the nicest shape for a lady/man to be") and `aspired to' body shape ("the one you'd like to look like when grown up") were within subjects, chosen from figures on a scale from 0 to 9. For body-type trait association judgments the dependent variable was the fat or thin figure. The dependent variable for subjective and objective ratings of body shape was a scale ranging from 1 (Much too thin) to 5 (Much too fat).

Participants

140 children aged from 5 to 11 took part in the study. The children were from predominately white, middle-class backgrounds. All were pupils at two Hertfordshire Infant-Junior state schools and were taken from alternate school years to comprise four groups, aged 5, 7, 9 and 11. The distribution of males and females in each age group was:

Age 5: Males n = 19, Females n = 19

Age 7: Males n = 19, Females n = 13

Age 9: Males n = 20, Females n = 15

Age 11: Males n = 17, Females n = 18

Materials

The nine figures of male and female body shapes, ranging from extremely thin to extremely obese, were used to ascertain the children's 'ideal' female and male shape as well as the shape they 'aspired to' when older. These figures were used by Fallon and Rozin (1983) and by Cohn et al. (1987) to attain similar measures from older participants. The drawings originated from a Danish study by Stunkard, Sorensen and Schulsinger (1983) into the heritability of obesity, and were found to be extremely reliable when children's assessments of their parents' body shape were compared with the actual body shape of the parents.

The figures were black line drawings on a white background, with all nine positioned side by side on an A4 (landscape) page. They comprised of 9 figures, in bathing costumes, ranging from extremely thin to extremely obese. There was monotonic increase in percentage overweight from the first to the ninth figure for both men and women. The full range of female and male figures appeared on separate pages.

To gain a measure of which traits the children considered as masculine and feminine, two figures were presented to the children. These were the middle (No.5) male and female figure from the original range, and were positioned equal distances apart, again on an A4 page.

To gain a measure of which traits the children associated with fat and thin males and females, one fat and one thin figure of the same sex were presented as choices, since a pilot study had revealed that children had difficulty attributing traits when given a larger choice. The thin figure (no.3) and fat figure (no.7) were selected from the range of 9 since they represented matched opposites without using extremes. A fat and thin male were presented on the same page and a fat and thin female were presented on a separate page.

The six male and six female traits were taken from a list derived from the Spence, Helmreich and Stapp Personal Attributes Questionnaire (Ruble, 1984), which has frequently been used in research into gender stereotypes. A shortened list of six traits for each gender was selected to be presented to the children.

The adjectives corresponded to those in the Bem Sex Role Inventory (B.S.R.I. see Bem, 1974) but were adapted so that all of the age groups would comprehend. For example, the trait 'competitive' was presented as 'likes to win', thus making it understandable for even the youngest subject without detracting from the meaning.

Procedure

The children were interviewed individually, in the case of the first school in a small room, just off the school library and in the second school in the classroom, in an area away from the rest of the class. The child and experimenter were seated alongside each other, with the stimulus material placed on a small table before them.

Indication of 'ideal' figure

After introductions, the experimenter began by showing the child the set of nine figures. Order of presentation (male or female first) and of figure size (thinnest to fattest and fattest to thinnest) were counter-balanced to avoid order effects. The child was told, "I would like you to look at these ladies (men)... you will notice that they are all different shapes, some are much thinner or fatter than others". For alternative interviews the experimenter reversed the order and said "some are much fatter or thinner than others" again to avoid order effects. The experimenter continued, "Now could you look at them carefully and tell me which you think is the nicest shape for a lady (man) to be?". The child indicated their preference, usually by pointing to the figure and the procedure was repeated for the opposite gender.

Indication of 'aspired to' figure

When figures of the same sex as the child were presented the experimenter asked the child, "Now, could you have another look at them and tell me which one you would like to look like when you are grown up?". Again the child indicated their preference.

Ascription of traits to males and female figures

The page with the single male and female figure side by side was then presented, with half the children seeing the male on the left and the other half seeing the female on the left. The experimenter asked the child to look at the two figures and said, "Now, I am going to tell you about somebody and I want you to tell me whether you think I could be talking about this person or this person....or both of them." The child was told of the twelve (six male and six female) traits. The traits were posed as statements, for male traits they consisted "This person likes to ... be the leader/to win/to have adventures/to fix things/likes their job/likes to be strong." The female traits were, "This person likes...their home/drawing and painting/to be kind/to help others/ children/ singing." The traits were presented in a random order each time and, after each trait, the child responded either by pointing or by referring to the

figure(s) which they thought the statement was describing. Responses were scored as either 'man', 'lady' or 'both'. This produced a measure of which traits the children thought were either masculine, feminine or shared by both sexes.

Ascription of traits to fat and thin figures

Next, the page with one fat and one thin figure of the same sex were presented, i.e. either a fat and a thin female or a fat and thin male. This time the six traits relating to that sex were presented in the way outlined above, i.e. when the children saw a fat and a thin female figure they were asked to ascribe the six female traits to one or both figures. The same procedure was carried out for the six male character traits and the thin and fat male figures. Counterbalancing of order of presentation was carried out as before. The child indicated which figure they thought the experimenter was talking about. The experimenter recorded the responses as either 'thin', 'fat' or 'both'. This produced a measure of which traits the children thought were possessed by the thin person, the fat person or could be shared by both body types.

Self-ratings and diet-related information

At the end of the session the child was asked how they rated their own body shape. They were shown a printed scale from 1 to 5, which was also read out to them, comprising:

- 1) Much too thin
- 2) A bit too thin
- 3) Medium or average
- 4) A bit too fat
- 5) Much too fat.

The child chose the rating which they thought best described themselves. The experimenter then discretely made an objective rating for each child's body shape, using the same scale from 1 to 5. A pilot study using a second objective rater had produced high inter-rater reliability ($r = 0.9$) for this measure and this justified the use of one rater for this study.

The child was then asked, "Would you ever go on a diet?" and "Do you know anyone else who diets?" and the children were allowed to respond freely. The children were then given a short debriefing and thanked for their co-operation.

Results

Ideal Female Figure

In each age group a mean of the scores for the children's choice of the ideal female shape was obtained, from their responses to the question, 'Which is the nicest shape for a lady to be?' when shown the nine female figures.

The data were entered into a two factor, Gender (2 levels: boys, girls) x Age (4 levels: 5, 7, 9, 11 years) Analysis of Variance. There was a significant main effect of Gender, $F(1,132) = 31.845$, $p = 0.0001$. As predicted, girls and

boys differed significantly in their perception of the ideal female figure. The 95% confidence interval bars (see Figure 2) indicate that at ages 5, 9 and 11 girls chose a significantly thinner ideal female figure.

There was also a significant effect of Age, $F(1,132) = 18.291, p = 0.0001$. The age groups differed in their perception of the ideal female shape, and the graph shows that 5 year olds have the lowest mean scores. The interaction between sex and age was not significant, $F(3,132) = 1.493$ ns.

Insert Figure 2 here

Ideal Male Figure

The children's' choice of the 'ideal' male figure, from their responses to the question, 'Which is the nicest shape for a man to be?' were entered into a two factor, Gender (2 levels: boys, girls x Age (4 levels: 5, 7, 9, 11 years) ANOVA. This time there was no main effect of Gender $F(1,132) = 1.44$ ns. Girls and boys did not differ significantly in their perception of the ideal male figure. There was a significant effect of Age, $F(3,132) = 19.811, p = 0.0001$. Thus, the four age groups differ in their perception of the ideal male shape. Figure 3 shows that as children get older, both boys and girls select a larger 'ideal' male shape. No interaction between sex and age was found, $F(3,132) = 0.49$ ns.

Insert Figure 3 here

'Ideal' and 'Aspired to' Figure: Girls

The girls' responses to the question, 'Which one would you like to look like when you are grown up?' (their 'aspired to' body shape) together with their scores for the 'ideal' same-sex figure, were treated as a within subjects factor and entered into a mixed Age (4 levels: 5, 7, 9, 11 years) x Body Shape (2 levels, 'ideal' and 'aspired to') ANOVA, with Body Shape as the repeated measure. There was a significant effect of age, $F(3,61) = 16.629, p = 0.0001$. The four age groups of girls differed in their choices of 'ideal' and 'aspired to' female figures. There was no main effect of body shape, $F(1,61) = 0.775$ ns. Thus, overall, there was no significant difference between the girls' 'ideal' body shape and their 'aspired to' body shape. There was a significant interaction of body shape and age, $F(3,61) = 5.554, p = 0.002$, the difference between mean 'ideal' and 'aspired to' was not the same in all age groups. The girls' mean 'ideal' was thinner than the mean 'aspired to' figure at age 5 ($M = 1.316$ and 1.789 respectively), larger at age 7 ($M = 2.923$ and 2.462) and age 9 ($M = 2.933$ and 2.533) and virtually the same at age 11 ($M = 3.222$ and 3.278).

'Ideal' and 'Aspired to' Figure: Boys

The boys' choices of their 'ideal' and 'aspired to' figures were entered into a two factor mixed, Age (4 levels: 5, 7, 9, 11, years) x Body Shape (2 levels: 'ideal' and 'aspired to' figure) mixed ANOVA, with Body Shape as the repeated measure. There was a main effect of age, $F(3,71) = 5.231, p = 0.0026$. The four age groups of boys differed in the mean 'ideal' and 'aspired to' male body shape. There was a main effect of Body Shape, $F(1,71) = 5.890, p = 0.0178$. Thus, there was a significant difference in 'ideal' and 'aspired to' male body shape.

There was also a significant Age x Body Shape interaction, $F(3,71) = 3.154, p = .03$. The difference between 'ideal' and 'aspired to' male body shape was not the same for all age groups of boys. 'Ideal' was thinner than 'aspired to' at age 5 ($M = 3.053$ and 4.053 respectively), age 7 ($M = 3.789$ and 4.000) and age 9 ($M = 4.500$ and 4.700) but 'ideal' and 'aspired to' were very similar for 11 year olds ($M = 4.765$ and 4.647 respectively).

For both boys and girls it has been shown that as they grow older their choices of what they think is the ideal shape, and the shape they would like to be when older, appear to converge by age 11.

Boys' and Girls' 'Aspired to' Body Shape

Each child selected a figure, from the range the same sex as themselves, which they would most like to look like when grown up. Girls' and boys' scores on 'aspired to' body shape, in all age groups, were entered into a two way, Age (4 levels: 5, 7, 9, 11 years) x Gender (2 levels: boys, girls) ANOVA. There was a main effect of Gender, $F(1,132) = 96.088, p = 0.0001$. Thus, girls and boys scores for 'aspired to' body shape differed significantly. There was also a main effect of Age, $F(1,132) = 6.146, p = .0006$. The age groups differed in their 'aspired to' body shape scores. There was no significant interaction of age and sex, $F(3,132) = 1.455$ ns. Figure 4 shows that in every age group the girls' mean choice was significantly lower ($p < 0.05$) than the boys'. As predicted, girls in all age groups aspired to a thinner figure than boys.

Insert Figure 4 here

Trait Association Measures

Initially, the children ascribed the six feminine traits and the six masculine traits to either a male or female figure. This was to establish that they recognised the traits as feminine or masculine. Data, from boys and girls in each age group, were in the form of frequencies for each trait ascribed to the man or the lady. Chi Square analysis was then carried out to establish whether more feminine traits were ascribed to the feminine figure than would be expected by chance, and similarly with the masculine traits to the male figure. Feminine traits were ascribed significantly more frequently to the female figure ($p < 0.01$), apart from the trait 'likes to help others' which was not significant in the 7 years age group. Apart from this one instance, children in all age groups

demonstrated a clear perception of which traits were stereotypically feminine. All of the masculine traits were ascribed significantly more frequently to the male figure ($p < 0.05$). This confirmed that boys and girls at all ages had clear perceptions about which traits were stereotypically masculine.

These measures of stereotypicality judgments were taken to validate the assumption that the children recognised the traits as being masculine or feminine, and justified the use of the masculine and feminine traits in the next analysis, involving ascription of gender appropriate traits to a thin or fat figure.

Ascription of Masculine Traits to Fat and Thin Male Figures

The children had to ascribe each of the six masculine traits to either a fat or a thin male figure, or both. A Chi Square test was performed to ascertain whether more male traits were attributed to one body type than would be expected by chance.

Insert Figure 5 here

At no age was every trait ascribed significantly more to one particular figure, either fat or thin. Thus, the children did not appear to see one particular somatotype as possessing more masculine traits. As can be seen from Figure 5, the percentage of responses were fairly evenly distributed between the fat and thin figure.

Ascription of Feminine Traits to Thin and Fat Female Figures

Children had to attribute each of the six feminine traits to either a fat or a thin female figure, or both. A Chi Square test was performed to test whether more female traits were ascribed to one body type than would be expected by chance.

Insert Figure 6 here

At ages 7, 9 and 11 children ascribed all of the feminine traits significantly more often to the thin figure than to the fat one. At age 5 four of the six traits were ascribed significantly more often to the thinner figure ($p < .05$). Overall, as predicted, children appear to perceive the thinner figure as possessing more feminine traits than the fatter figure. As Figure 6 shows, there was a consistently higher percentage of responses ascribing each trait to the thin figure, ranging from 66% to 87%, rather than to the fat figure. The significantly higher frequency of ascriptions of feminine characteristics to the thinner figure indicate an association of thinness with greater femininity.

Subjective and Objective Rating of Body Shape

Children were asked to rate their own body shape on a scale from 1 (Much too thin) to 5 (Much too fat). The experimenter also made an objective rating of each child, using the same scale. The subjective and objective ratings were significantly correlated: Girls $r = 0.329$ (df 63) $p < 0.01$, Boys $r = 0.376$ (df 75) $p < 0.01$. Thus, girls' and boys' subjective rating of themselves did not differ significantly from the objective rating made by the experimenter.

Dieting Motivation

The children were also asked, 'Would you ever go on a diet?' and 'Do you know anybody else who diets?'. The responses to these two measures were analysed for correlation, for boys and girls separately. For girls, the answers to the two questions were significantly correlated, $r = .307$ (df 63) $p < 0.05$. Girls who said, Yes they would diet were also more likely to say they knew somebody else who dieted. For boys, the correlation between the two measures was not significant, $r = .225$ (df 73) ns. Boys who said, Yes they would diet were not more likely to say they knew somebody else who dieted.

There was also a significant correlation for girls between their subjective rating of their body shape and the tendency to answer Yes to the question 'Would you ever go on a diet', $r = .25$ (df 63) $p < 0.05$. For boys these two measures were not significantly correlated, $r = .156$ (df 73) ns. Therefore, there was a higher association for girls than boys between how they rated their own body shape and the likelihood that they would diet.

In every age group, a higher percentage of girls than boys said they would go on a diet (see Table 1). By age 11 a higher percentage of girls than boys said they would diet (72% compared to 41%) and that they knew other people who dieted (83% compared to 35%).

Insert Table 1 here

Discussion

The aim of this study was to investigate the body image concerns of children aged from five to eleven, to confirm previous researchers' findings that a thinness bias could be detected in girls as young as 6 or 7 years. It also set out to explore why a thinner figure was more appealing, in particular whether the children perceived the thinner female figure as possessing more feminine traits than the fatter one and the implications this may have for the development of eating disorders.

On the basis of previous evidence (Fallon and Rozin, 1983; Cohn et al. 1987; Hill et al, 1990; 1992; 1994) it was predicted that the ideal female figure, the

body shape which the children thought was the nicest shape for a lady to be, would at a certain age be thinner for girls than for boys. In fact, in all the age groups girls chose a thinner ideal female figure than boys, with the difference reaching significance at ages five, nine and eleven.

When the children had to select an ideal male figure, a different pattern of results emerged. Girls and boys did not differ at any age in their perception of the ideal male shape. Once again the five year olds selected the thinner figure and, as with the ideal female, there was a trend towards selecting a larger ideal figure with age. The younger children's bias towards the thinnest figure on the scale was less extreme for their male than for their female choice which suggests that their perceptions of what is desirable for the two sexes do differ. Girls and boys on the whole agreed about what is the ideal male shape and by age 11 both were selecting a figure very close to the average.

Adult figures (Fallon & Rozin, 1983) were used in this study rather than child figures (Collins, 1991) since the principle aim was to ascertain how children viewed themselves in the future, particularly if the children are being influenced by cultural stereotypes. Since the stereotype for slimness which pervades the Western media uses thin adult models the study used adult figures to ascertain whether this is how children thought they would like to be when older.

The finding that girls selected a significantly thinner ideal female figure than boys raises questions about why cultural stereotypes for thinness in females are interpreted in a more extreme form by girls than boys. One explanation is that gender appropriate information is more salient to the developing child than information about the opposite gender, resulting in boys being less affected by the cultural stereotype for female thinness. The figure aspired to by the girls was also significantly thinner than that aspired to by boys, and this effect was found at all ages. Girls also were found to aspire to a figure which was thinner than the one they considered ideal, and this was evident at age 7. This finding that very young girls would like to be even thinner than their ideal figure mirrors the findings of Fallon and Rozin with college students.

Theories which focus on the cognitive dysfunction in anorexia nervosa have stressed that anorectics do not develop the formal operational thinking or conceptual complexity characteristic of mature cognition (Garfinkel & Garner, 1982). In this sense, their rigid interpretation of body stereotypes is not unlike that of the five year olds in this study which provides some insight, albeit tentative, into the cognitions underlying anorexia nervosa.

This study not only explored the children's preference for body shapes but the character associations which accompanied these. The measures of masculine and feminine traits produced findings consistent with predictions. The children ascribed more feminine traits to the thinner female figure, whereas ascription of the masculine traits did not favour any one particular body type. This

supports the findings of Harris et al. (1982) and is consistent with the theories of Martin and Halverson (1983) and Bem (1987) on gender schemas. Although a fairly heterogeneous set of traits were used for each gender, the results appear unequivocal. Femininity and thinness are associated.

Feminine traits were consistently linked to the thin female figure, but not the fat one. Whereas previous researchers have found that children are more likely to ascribe negative characteristics to obese figures, this study suggests that in females size and femininity are associated, but this is not the case for males. Culturally sanctioned stereotypes therefore may, as Bem postulates, be being incorporated into and determining the nature of the developing gender schema. Again, this may point to a cognitive dysfunction in anorectics, in whom a rigid adherence to the stereotype is taken to the extreme.

The six masculine traits were not ascribed significantly more often to either the thin or the fat figure. It therefore appears that the ascription of masculine traits is independent of body size, as suggested by Harris et al. (1982) and Burdick and Tess (1983). To be feminine, it seems, females have to be thin although males can be either thin or fat and still be masculine.

How can these findings be integrated? They suggest that during development a thinner female comes to be seen as more feminine than a fatter one, and thus more desirable, and this leads girls to select a thin ideal female and to aspire to a thin figure. Consequently girls are more likely to diet, and to be more sensitive to others dieting, as these results have shown. Although the five year olds may not have fully understood what is meant by dieting, it appeared to be a behaviour which is much more familiar to the older children. It is certainly disturbing that some girls in the nine and eleven year age group admitted they were dieting when they apparently did not need to, as none were rated as being overweight by the experimenter. Whilst it would have been preferable to obtain objective measurements for each child this finding appears to endorse Davies and Furnham (1986) who found that girls who diet are not necessarily overweight but nonetheless want to be thinner than they are.

Furthermore, as many as 83% of the eleven year old girls said they knew someone else who was dieting. Occasionally, this other person was one of their peers, but often it was their mother. Out of the 18 eleven year old girls, 11 said their mothers dieted (61%) yet only 2 of the 17 eleven year old boys (12%) said their mothers dieted. Presumably the girls' mothers did not diet any more than the boys' mothers, but this indicates the increased salience of the mothers' behaviour for the girls. This is disturbing since the role model who could disperse the young girl's body concerns, her mother, may be the very person reinforcing and modelling dieting behaviour. Bruch (1974) identified having a parent who is preoccupied with food as a predisposing factor in anorexia nervosa. If family relationships are further characterised by rigidity (Minuchin, Rosman & Baker, 1978), this may even expose the child to the distorted beliefs which accompany anorexia nervosa.

In summary, we see from this study that the body image concerns found in adolescents (Fallon & Rozin, 1983; Cohn et al,1987; Salmons et al.1988) are also present in preadolescent girls. Whereas much of the existing research fails to address the developmental roots of the adolescent concerns a developmental trend beginning at age five is suggested by these findings. By the age of five, girls already have a perception of the ideal female as being thin. By age seven they recognise that this is the body shape they would like, as seen by their 'aspired to' choices. By the time girls reach nine years old, some have become aware of a mechanism for pursuing this aspiration and have begun dieting.

The findings also indicate that femininity is unequivocally associated with a thinner figure and, with girls as young as nine and eleven dieting, there are serious health implications for young females. It should be noted, however, that the participants were a sample of predominately white British school children and this study cannot tell us about cultural differences in figure preference or dieting behaviour. However, in the existing Western cultural climate there is less pressure for males to be thin, as exemplified by the children's choices of a larger ideal male, and no particular somatotype associated with masculinity. This makes males less inclined to diet or to seek a body shape which is counter to the direction of their biological development. It may also make them less prone to depressive illness, which is the outcome for some females who cannot meet high cultural expectations. Knowledge from this whole area of research has implications for educators, who can discourage young children from attaching too much importance to physical appearance. Although the data are drawn from a non-clinical population, they may also alert clinicians to signs in young children who could be at risk of developing eating disorders. The discovery of a thinness bias in girls as young as five warns that implementing prevention programmes in adolescence may be too late for some of those at risk.

Figure_1: Stimulus figures for `ideal' and `aspired to' ratings.

(from Stunkard, Sorensen and Schulsinger, 1983)

Figure 2: The ideal female figure chosen by boys and girls in all age groups.

Figure 3: The ideal male figure chosen by boys and girls in all age groups.

Figure 4: The 'aspired to' mean scores of girls and boys.

Figure 5: The ascription of masculine traits to thin and fat male figures by all children.

Figure 6: The ascription of feminine traits to fat and thin female figures by all children.

Table 1: Percentage of children, in each age group, who said they would diet ('Self'), or knew someone who dieted ('Other').

AGE	5		7		9		
DIET?	Self	Other	Self	Other	Self	Other	Self
11 Other							
% Girls 72	31 83	10	31	70	46	53	
% Boys 41	21 35	31		21	26	15	55

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