

Satisfaction with Body Image for Early Adolescent Females: The Impact of Pubertal Timing Within Different School Environments¹

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During adolescence dramatic physical changes take place which the individual must incorporate into his or her evolving body image. The impact of different school environments on this incorporation process is explored using data on 225 White females from a longitudinal study. Differences in physical characteristics between early, middle, and late developers were assessed each year. The effects of pubertal timing on satisfaction with body image dimensions and self-esteem were then explored for sixth- and seventh-graders within different school environments. Reference group theory was used to examine three alternative hypotheses. Early versus late onset of menarche had different effects on certain aspects of satisfaction with body image, depending on the school environment. Results support the strength of the cultural ideal of thinness for women, but no other hypothesis had consistent support. The findings indicated the need to consider a multiplicity of factors in relation to specific body image dimensions.

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INTRODUCTION

Early adolescence is marked by the onset of complex physiological changes. In addition to an increase in height and weight and the attainment of mature reproductive capacity, the individual also undergoes changes in the distribution of body fat, the development of a variety of secondary sexual characteristics, and alterations in body proportions (Tanner, 1962; Faust, 1977). Individual differences in these characteristics and the timing of pubertal processes mean these changes must be incorporated into one's body image and personally evaluated in a diversity of settings.

For years authors have noted the importance of an individual's body image and its relationship to self-image (Schilder, 1935; Rosenbaum, 1979; Kavrell and Jarcho, 1980; Hamburg, 1974; Secord and Jourard, 1953; Musa and Roach, 1973). Havighurst (1972), for example, suggested that the acceptance of one's body is a basic task of adolescence. Others have argued that in early adolescence, adjustment to the physical changes of puberty and the timing of these changes have major impact on body image and self-image (e.g., Epstein, 1973; Tobin-Richards *et al.*, 1983; Simmons, *et al.*, 1983; Faust, 1983). Furthermore, the relationship between body image and self-image is reported to be stronger for girls than boys (Rosenberg and Simmons, 1975a, 1975b; Lerner and Karabenick, 1974; Padin *et al.*, 1981).

Recent research on the impact of pubertal timing on female body image and self-image is found primarily in studies by Brooks-Gunn and her colleagues (Brooks-Gunn, 1984; Brooks-Gunn and Warren, 1983; Brooks-Gunn and Ruble, 1983), Petersen and her colleagues (Petersen *et al.*, 1983; Tobin-Richards *et al.*, 1983; Wilen and Petersen, 1980), and articles from our own research study (Blyth *et al.*, 1981; Simmons *et al.*, 1983). Almost all such studies find the early adolescent's body image to be one of the few areas consistently related to the timing of physical maturation, with early developing girls generally having less positive body images than their late maturing counterparts. These findings are generally consistent across studies in spite of variations in definitions of early and late maturity and the specific aspects of the body image evaluated. Almost all of these findings come from studies of early adolescents (fifth, sixth, and seventh grades) when physical differences are at a maximum.

According to our previous analyses (Simmons *et al.*, 1983), the differences between early and late maturers change slightly over the years (usually weakening) and vary somewhat with what aspect of the body image is being evaluated. Tobin-Richards *et al.* (1983), also note that there is a relationship between the girl's perception of her timing and her body image; girls who

perceive themselves to be early developers have less positive body images.

For reasons that are not entirely clear, the findings from the Petersen study (Tobin-Richards *et al.*, 1983) are curvilinear (with average or on-time girls having the most positive body image) while results from our study generally follow a linear pattern favoring late maturers. Our analyses have also indicated no direct relationship between self-esteem and pubertal timing for girls (Simmons *et al.*, 1983), although some indirect effects have previously been discussed (Simmons *et al.*, 1979). The present analysis should shed light on these differences by exploring two school contexts within which these physical changes occur and by investigating the impact these contexts may have on the adolescent girl's interpretation of the physical changes.

The adolescent girl's perception and evaluation of her body and herself should be affected by several complex processes. First of all, there is evidence of changes in cognitive functioning in adolescence that may make girls more self-conscious (e.g., Simmons *et al.*, 1973) as well as allow them to construct and reinterpret their theories about themselves in new ways (e.g., Elkind, 1974; Kohlberg and Gilligan, 1971). In addition, these physical and cognitive changes occur at a time when early adolescents are becoming increasingly sensitive to issues of peer conformity (e.g., Berndt, 1979). Furthermore, evidence indicates that the body builds of adolescents are related to peer evaluations and prestige (Savin-Williams, 1979; Faust, 1960; Clausen, 1975; Lerner, 1969; Staffieri, 1967; Douvan and Adelson, 1966). Faust's study, in particular, has demonstrated the need to examine these effects with a sensitivity to the adolescent's school contexts. This type of contextual analysis has not been done in regard to the body image of early adolescent girls, although some previous work for boys suggests its utility (see Blyth *et al.*, 1981).

Relevant Reference Groups and Comparisons

In order to understand the development of a girl's body image and her satisfaction with that body image, it is important to keep in mind not only actual physically observable characteristics but also the individual's own subjective perceptions (Lerner, next issue). Schonfeld (1964) noted that an individual's evaluation of her physical appearance is influenced 1) by the way others react to her, (2) by a comparison of her development with the physical development of others in her immediate environment, and (3) by a comparison to cultural ideals. Similarly, Faust (1983) and Petersen and Taylor (1980) have emphasized the importance of sociocultural factors in body im-

age evaluation. Kolb (1975) speculates that when the value of particular characteristics are ambiguous (as might well be the case for the physical changes taking place in early adolescence), the individual's evaluation of these characteristics will depend to an even greater extent on the opinion of significant others.

Various social-psychological theories have suggested the importance of different social comparison processes and reference groups (e.g., Festinger, 1968; Merton and Rossi, 1968; Kelley, 1968). Faust (1983) has used Kelley's work to discuss the alternative construction system in which adolescent growth can be viewed. Social contexts provide both normative and comparative reference groups for the individual. As normative reference groups, they provide the standards to be emphasized—in this case, standards of appropriate physical beauty. As comparative reference groups, they provide individuals against whom one can rate or rank oneself. In this section we shall discuss possible reference standards which early adolescents might use in evaluating their body image. It is not our intent to hypothesize which reference standard will be used most, but to explore how differing school contexts may provide different reference groups that alter the meaning attached to the physical changes of puberty.

First, students may use the norms of the total society as a reference standard. At the societal level, Faust (1983) makes a convincing case for our society's current emphasis on being thin, long-legged, and physically attractive. This image is consistently portrayed through the media and emphasizes a body form which, as Faust demonstrates, is essentially prepubertal. This ideal would tend to favor late developing girls, who are more likely to be longer legged and to have an overall thinner appearance than their early maturing counterparts. If this idealized body image is used as a comparative reference, it would suggest that early developing girls would be less satisfied with most aspects of their body image than late developing girls. This formulation would be generally consistent with the work cited above. If this cultural ideal is widespread, one would not expect evaluations to be differentially affected by school contexts, unless one context places greater value on the cultural ideal.

A second comparison that adolescents may make has to do with the degree to which they see themselves as maturing and approximating a desired adult physical status. The issue here is less one of ideal beauty and more one of looking like an adult rather than a child. For early adolescent girls, this emphasis may well suggest the relatively greater importance of breast development as a characteristic that visibly signals to others her greater adult status (see Brooks-Gunn, 1984). If a comparison to adults or older adolescents is the overriding concern, early physical developers should have at least a temporary advantage, since their breast development occurs earlier than that of late developers. The results reported by Simmons *et al.* (1983) on the greater

satisfaction with figure development in sixth and seventh grade for early developing girls would be consistent with this interpretation (see also Brooks-Gunn and Warren, 1983).

The attainment of certain adult bodily features may only be important in the initial phases of physical maturity, when a "sign" is needed that one is beginning to change. This initial sign may become relatively less important as all girls mature and other aspects of maturation (e.g., menarche) occur. Once all girls show breast development, greater emphasis may be placed on the idealized norm of overall figure development.

The interpretation of early signs of maturity, such as breast development, may be affected by comparative and normative reference groups in the different school contexts. According to the theory of relative deprivation (Merton, 1957), individuals who rank high on a desired characteristic will be more satisfied if they are more unusual; individuals who rank low will be more satisfied if they are not unusual. In this case, if students wish to look more adult-like, early developers will be more satisfied if they are among the few who look like adults than if the majority of peers also have attained the desired state. Late developers will be more satisfied, however, if many rather than few peers share their undesirable situation (child-like appearance). According to this theory, all children will be more content with their appearance in elementary schools where the desired state of adult appearance is rarer.

Thus, girls may use the overall cultural ideal of beauty as their normative standard, they may use visible signs of adult appearance (e.g., breast development) and its interpretation within the school context as their reference standard, or they may want to approximate the average among their peers. Tobin-Richards *et al.* (1983) use this last interpretation to explain the curvilinear relationship they found between the timing of physical maturation and body image satisfaction. For this last hypothesis, however, it is not clear whether approximating the average maturity level in the school means approximating the physical status of one's same-age peers, same-grade peers, the older students in the school, or some combination of all three. Furthermore, even within the peer reference groups, there may be a conflict in which aspects of development are most highly valued.

Finally, the effect of school contexts upon the student's evaluation of self and body may be less an issue of one's reference standard and more an issue of the stability of the peer reference groups. What may be relevant are the problems and stress of undergoing multiple simultaneous changes (see Simmons *et al.*, 1979). If the physical changes of puberty closely coincide with major changes in the school context, it may be particularly difficult to establish a positive body image in the face of unstable or changing reference group norms.

In summary, several alternative hypotheses about the effects of pubertal development in different school contexts are being proposed, dependent

on various potential reference standards or reference groups. These alternatives are the following:

1. "Cultural ideal" as reference point: Late developers will have a more positive body image, regardless of the school context.
2. Adult appearance as reference point: Early developers will have more positive body images, and late developers less positive body images, especially in regard to breast development and especially in early years. Furthermore, both early and late developers will be more satisfied in contexts with fewer older children, based on the theory of relative deprivation.
3. Peer average as reference point: Middle developers will have the most positive body images. In school contexts with many older children, early development may be more favored (and late development less favored) than in schools with fewer older children because of the closer approximation to the average for the school.
4. Changes in reference groups: In cases where pubertal timing coincides with environmental change, negative evaluations will result partly because of the multiple simultaneous changes and resulting instability in reference groups.

The present study is unable to answer definitively which model/hypothesis is accurate. Instead we wish to explore whether the ways in which early adolescent girls evaluate themselves—specifically their satisfaction with their body image and their self-esteem—is differentially influenced by the school context within which pubertal development takes place and the timing of that development. Thus, the primary research question is not the body image satisfaction of early versus late developing girls, but whether these evaluations are differential as a result of the school context in which they take place. We shall briefly describe the actual physical differences in the early and late maturers we studied, illustrate the contrasting maturity levels of two school contexts experienced during sixth and seventh grade, and examine the actual evaluations of several dimensions of body image and self-image.

METHOD

In order to explore these questions, we shall draw upon a five-year longitudinal study designed to examine the interrelations of school environments and physical development on the social and psychological development of early adolescents. The school contexts under study involve students who either (1) remained in an elementary school environment through eighth grade and

then shifted into a four-year high school (K-8 into 9-12), or (2) left the elementary school environment after sixth grade to enter a seventh through ninth grade junior high and then a tenth through twelfth grade senior high (K-6 into 7-9 into 10-12).

Subjects

The data were collected within the Milwaukee public schools between 1974 and 1979. All of the available kindergarten through eighth-grade (K-8) schools were selected for the study, with six out of seven participating. In selecting the eight kindergarten through sixth grade (K-6) schools which would be as comparable as possible to the K-8 schools, a constrained, stratified, random sampling procedure was used. The percentage of minority students in the school and the size of the sixth-grade class were used as stratifying variables. All of the schools in the present analysis were predominantly White. A comparison of the K-8 schools and the K-6 schools showed them to be quite similar in family income, father's education, occupation, and marital status, mean achievement levels, and the experience level of teachers (see Blyth, 1977).

All sixth-grade students were asked to participate in the study; parental permission was obtained from 85%. Two-hundred twenty-five White girls in sixth grade who had complete data and were in an appropriate grade for this age (i.e., within 2 standard deviations of the age norm) were selected. Students were followed from seventh through tenth grades if they remained within the Milwaukee public schools. For this paper, students who did not experience the school environments under study in later years (e.g., a K-8 student who entered a junior high school) were eliminated. These criteria, combined with normal subject mortality rates, led to 210 of the original 225 subjects being interviewed in seventh grade. In this analysis, we concentrate on grades 6 and 7 only.

Measurement

Personal private interviews were conducted with all students as they moved from the sixth into the seventh, ninth, and tenth grades. Interviews were conducted by trained survey interviewers using a structured format. A registered nurse, hired by the project, interviewed and measured each student twice a year to establish the level of each youth's physical development. In addition to objective measures such as height and weight, observational ratings were made on the perceived degree of thinness (using a 5-point scale ranging from fat to skinny), perceived figure/breast development (using a

4-point scale ranging from very developed to not even noticeable), and perceived physical maturity relative to other students in her grade (using a 5-point scale).

Relative Onset of Menarche. In order to establish when a particular girl first experienced menstruation and whether this placed her relatively early or late in pubertal development with respect to her peers, we had the registered nurse ask, at each visit, whether the girl had a menstrual period or monthly bleeding. If the response was affirmative, she was then asked to report the month and year of her first period and her age at the time of onset. Using this information, we were able to establish when menarche occurred and remove some of the bias in self-reports of menarche due to initial secretiveness.

We then sought to divide our sample into three roughly equal groups of early, middle, and late maturers. Girls who reached menarche prior to beginning seventh grade were classified as early developers (38%). Girls who reached menarche sometime during the seventh grade or the summer following seventh grade were classified as middle developers (27%). Finally, girls who had not reached menarche prior to the beginning of eighth grade were considered to be late developers (35%).

It is important to recognize that the present classification of girls into early, middle, and late developers based on relative onset of menarche has not been directly standardized with respect to age, nor is it a measure of extreme early or extreme late development. The intent was to create three approximately equal groups using natural school-year breaks.

Satisfaction with Body Image. To establish how an individual perceived her body image, girls rated (1) their satisfaction with three aspects of their bodies (height, weight, and figure development) using a 4-point scale ranging from "not at all happy" to "very happy" and (2) their overall looks on a 4-point scale ranging from "not at all good looking" to "very good looking."

An examination of the intercorrelations among these dimensions of perceived body image satisfaction indicates that girls' satisfaction with their figures is highly correlated with their satisfaction with their weight (0.45 in sixth grade). Girls' satisfaction with their height was only marginally related to their satisfaction with the other dimensions. The subjects' overall evaluation of their looks was most highly correlated with their satisfaction with their figure (r_s from 0.36 to 0.51) and then to satisfaction with their weight (r_s from 0.21 to 0.40). These correlations are not high enough to justify collapsing the items into a single scale. Maintaining the differences between these dimensions is particularly important during the early adolescent time period when physical development is beginning to occur and may occur at different rates for different physical characteristics.

Self-Esteem. The self-esteem scale of Simmons *et al.*, (1973), which consists of six items adapted from the earlier Rosenberg Self-Esteem Scale,

was used. A high score on the scale indicates that the person considers herself to be a person of worth, though not necessarily superior to others. A low score would indicate some degree of self-rejection or dissatisfaction (see Simmons *et al.*, 1973, 1979, for specific items and reliability and validity data).

Physical Differences in Early, Middle, and Late Maturers

Table I summarizes the differences between early, middle, and late maturers in actual weight, height, and ponderal index (a measure of leanness). As Table I indicates, early maturing girls weighed more, were less lean, and were taller than either middle or late maturers in both grades. There were differences in ages between the early, middle, and late maturers, with early maturers being an average age of 12.1 years in sixth grade and late maturers being an average age of 11.7 years. Middle maturers in our sample more closely resemble the late maturers in age. These differences exist because the measure of relative onset of puberty is not standardized by age but by grade.

Table I. Means for Physical Characteristics and Observers' Ratings by Relative Onset of Menarche and Grade

	Relative onset		
	Early	Middle	Late
Physical characteristics			
Weight (lb)			
Grade 6 ^a	115.4	98.8	89.0
Grade 7 ^a	126.5	112.6	102.1
Height (mm)			
Grade 6 ^a	1562	1508	1478
Grade 7 ^a	1602	1566	1543
Leanness ^b			
Grade 6 ^a	12.7	12.9	13.1
Grade 7 ^a	12.7	12.9	13.1
Observers' ratings			
Figure development			
Grade 6 ^a	2.5	2.0	1.6
Grade 7 ^a	2.9	2.5	1.9
Thinness			
Grade 6 ^c	2.7	2.8	3.0
Grade 7 ^a	2.7	2.8	3.1
Comparative appearance			
Grade 6 ^a	4.1	3.6	3.1
Grade 7 ^a	3.9	3.5	3.0

^a $p < 0.01$ based on univariate F test, maximum $N = 225$.

^bAs measured by the ponderal index (ht/wt^3).

^c $p < 0.05$ based on univariate F test, maximum $N = 225$.

Observers ratings of figure development, thinness, and overall physical maturity significantly differentiated the early and late maturers. These findings are important because they show that the actual differences in the distribution of weight were observable to others.

While there were physical differences between early, middle, and late maturers, there were virtually no significant differences on these variables between students in the two school contexts. Consequently, the impact of different school environments cannot be a function of the physical differences of subjects in the two contexts.

The School Context

Before we look at the effects of different school environments on body image satisfaction and self-esteem, it is important to note several differences between the school environments with respect to the physical maturity of the peer group. The school types vary in the extent to which others in the school are likely to be more or less physically developed. Table II compares the different environments experienced by the students in sixth and seventh grade. All estimates in Table II are based on data from the sampled population projected for an average school of each type on a grade by grade basis and should therefore be considered a rough estimate.

In sixth grade there were no major differences in the overall size of the K-8 schools and the K-6 schools (approximately 500 students and 420 students, respectively). This means that there were also no differences in either the total number of other girls (row 1) or the number of menarcheal girls in the same grade as our subjects (row 2). The differences between the

Table II. Estimated Differences Between School Contexts in Enrollment and Physical Development of Female Students

	Grade 6		Grade 7	
	K-8	K-6	K-8	7-9
Estimated number of females per grade	30	30	30	215
Estimated number of postmenarcheal females per grade ^a	9 (30)	9 (30)	18 (60)	129 (60)
Estimated number of postmenarcheal females in the school ^a	56 (22)	12 (6)	56 (22)	538 (83)
Estimated mean rating for figure development (within the school)	1.5	1.2	1.5	2.7

^aPercentages are given in parentheses.

two environments in sixth grade become noticeable only when one looks at the estimated number and percentage of menarcheal girls in the school (rows 3 and 4). Menarcheal girls represent 6% of the girls in the K-6 schools and 22% in the K-8 schools.

Comparisons between the K-8 environment and the junior high school environment in seventh grade reveal more dramatic differences. Since the junior high school environment has more girls in the same grade level, we estimated that there would be a much larger number of menarcheal girls in seventh grade in junior high schools than in the K-8 schools (129 vs. 18), although the percentages (60%) would not differ. These differences are emphasized further when we look at the number of menarcheal girls in the whole school (500 in junior high, but less than 60 in the K-8 schools). Menarcheal seventh-graders are in a minority in the K-8 schools (22%), but clearly in the majority in the 7-9 junior high schools (83%).

The dramatic differences between the two school environments would also be apparent in estimates of the average ratings of figure development (1.5 vs 2.7). The average early maturing seventh-grader (with a figure rating of 2.9) would have a figure rated as more noticeable than the average in the K-8 school by 1.4 units on a 4-point scale and in the junior high schools by 0.2 units. In the junior high schools the late developers' figure development would be more deviant.

In summary, sixth-graders in the K-6 school who began to develop early were much more deviant from the other girls in the school than were the early developers in the K-8 school. In seventh grade, early and to some extent middle maturing girls in the K-8 school were still in a minority with respect to their entire school and had noticeably more developed figures. By seventh grade, the early developers who moved into the junior high school were no longer in a minority with respect to menarcheal status and their observable figure development was virtually indistinguishable from the average girl in their school. Thus, in seventh grade, the early developing girls in the K-8 schools are the most deviant with respect to their school environment.

Satisfaction with Body Image and Self-Esteem

As noted in the introduction, our previous analyses (Simmons *et al.*, 1983) indicated that the relative onset of menarche is strongly related to satisfaction with body image. Early maturers were generally less satisfied with their height, weight, and figure development than late maturers, even with height and weight controlled for. The only exception was that early maturers in sixth grade felt more positively about their figure development than did late maturers. We found no relationship between relative onset of

menarche and global self-esteem. All of these findings controlled for actual differences in height and weight and did not examine the effects for each school environment separately.

In order to ascertain whether different types of school environments affect the early, middle, and late maturing girl's satisfaction with her body image as well as an overall evaluation of her appearance and her global level of self-esteem, two-way analyses of variance were performed. If the type of school environment affects how the student perceives bodily changes, we would expect to find a statistically significant interaction between school environment and the relative onset of menarche.

Sixth Grade. Table III contains the two-way analysis of variance results and mean deviations for comparisons between sixth-graders in K-6 and K-8 elementary schools. With regard to satisfaction with various aspects of the body image, we find a main effect for the relative onset of puberty only for satisfaction with weight. Early developing girls in both school contexts are less satisfied with their weight than are middle or late maturers ($p < 0.001$). Since early maturers are noticeably heavier and less lean, a dissatisfaction with this aspect of their body image may reflect the general acceptance of the cultural ideal of being thin and lean as being more attractive.

Interactions for the satisfaction variables imply that early, middle, and late maturers' satisfaction differs as a function of the school context in which the changes are occurring. Late maturing girls in the K-8 environment are the most satisfied with their height and their figure, while the late maturing girls in the K-6 environment are the least satisfied ($p < 0.10$ and $p < 0.02$, respectively). Thus, with regard to satisfaction with height and figure, early developers in the K-6 environment are more satisfied than are early developers in the K-8 environment. Since early developing girls in the K-6 environment have figures which are more noticeable than anyone else in their school environment, their greater satisfaction may be due to possession of a valued but scarce quality, a form of relative deprivation. However, the theory of relative deprivation would also predict that the late developers would be less discontented in a K-6 school. The findings contradict this hypothesis. None of the three satisfaction dimensions showed strong curvilinear trends for either school context.

For self-esteem we found no significant school context effects, relative onset of puberty effects, or interaction.

Seventh Grade. Table III also summarizes the results of the two-way analysis of variance for seventh grade. Once again we find a significant relative onset of puberty effect for satisfaction with weight and height, with late maturers being more satisfied than early maturers ($p < 0.02$ and $p < 0.04$, respectively). A significant interaction effect ($p < 0.05$) for height

Table III. Mean Deviations and ANOVA Results for Satisfaction with Body Image Dimensions and Self-Esteem by Relative Onset of Menarche, School Context, and Grade^a

	Grade 6				Grade 7			
	Early onset	Middle onset	Late onset	Grand mean	Early onset	Middle onset	Late onset	Grand mean
Satisfaction with								
Height								
K-8	-0.08	0.04	0.27	3.27 ^d	-0.40	-0.10	0.39	3.17 ^{c,d}
K-6/7-9	0.05	-0.08	-0.15	(222)	-0.01	-0.12	0.08	(208)
Weight								
K-8	-0.50	0.11	0.18	2.54 ^c	-0.33	-0.12	0.18	2.69 ^c
K-6/7-9	-0.22	0.03	0.25	(222)	-0.09	-0.03	0.20	(209)
Figure development								
K-8	-0.34	0.04	0.06	2.72 ^d	-0.24	0.05	0.13	2.74
K-6/7-9	-0.20	0.03	-0.12	(219)	0.07	-0.08	-0.01	(209)
Evaluation of overall looks								
K-8	-0.23	-0.04	-0.05	2.63 ^b	-0.27	0.08	-0.02	2.62 ^d
K-6/7-9	0.03	0.13	0.05	(214)	0.04	-0.14	0.15	(208)
Self-esteem								
K-8	-0.05	0.15	-0.22	3.09	-0.10	0.45	0.51	3.05 ^{b,d}
K-6/7-9	0.37	-0.55	0.08	(222)	0.07	-0.85	0.02	(208)
Maximum Ns								
K-8	(25)	(30)	(32)	(87)	(22)	(28)	(30)	(80)
K-6/7-9	(50)	(35)	(53)	(138)	(42)	(35)	(53)	(130)

^aNs are given in parentheses.

^bThe main effect for school contexts was significant.

^cThe main effect for relative onset of menarche was significant.

^dThe interaction effect was significant.

satisfaction indicates the greatest differences between early and late maturers in the K-8 schools.

Although the pattern of results in seventh grade for figure development satisfaction is similar to that in sixth grade, it is considerably weaker and not significant. Perhaps the relative advantages of having or not having a figure in the two school environments has lessened. None of the satisfaction dimensions in either school context demonstrate strong curvilinear effects.

An interaction effect ($p = 0.03$) for evaluation of overall looks indicates that late developers are more satisfied with their looks than are early developers. The middle developers are the least satisfied with their looks only in the junior highs.

The results for self-esteem in seventh grade indicate both a significant school environment effect and a significant interaction effect. School environment effects have been discussed previously (Blyth *et al.*, 1978, 1983; Simmons *et al.*, 1979) and indicate that girls in the K-8 environment have higher self-esteem than those in the junior high school. The interaction effect suggests that the timing of maturation has differential effects in the two environments. Most noticeable is the lower self-esteem of middle maturers in the 7-9 school environment as contrasted to any of the other subjects. Middle maturers in the 7-9 junior high schools are the only group which are simultaneously experiencing a change in school settings. Thus, the interaction may not be due so much to a change in reference groups as to the simultaneity of changes in the early adolescent's life.

In summary, results indicate that early developing girls in both school environments are less satisfied with their weight than are middle and late maturers. In general, it would appear that early maturing girls in the K-8 environment in both sixth and seventh grade were somewhat less satisfied with their height and figures than were either the early maturers in the K-6 or 7-9 environments or late maturers in the K-8 schools. Middle maturers in junior high school seemed in particular jeopardy in terms of satisfaction with overall looks and self-esteem.

DISCUSSION

Our analysis of the physical differences between early, middle, and late maturers indicate that the differences are both measurable and observable to adult raters. Early maturers were both measurably and observably heavier and less lean than middle and late maturers. These results are consistent with those noted by Faust (1977, 1983), Petersen and Taylor (1980), and Brooks-Gunn and Warren (next issue). These differences in actual

physical characteristics must be remembered if we are to understand and interpret the effects of early, middle, and late development in different school contexts.

Perhaps the clearest single finding from this study is that the cultural ideal of thinness for women is strong and pervasive (Faust, 1983). In both sixth and seventh grades the early maturing girls who were physically heavier and less lean than the other girls were considerably less satisfied with their weight, regardless of the school context. Late maturing girls were the most satisfied. Thus, at least with respect to weight, the cultural ideal rather than school-specific reference groups appear to be important. While the overall strength of this relationship to weight is clear, it did not appear to affect the more general evaluations of looks or overall self-esteem. The early maturing girls did not generally rate themselves as less attractive or as having lower self-esteem. These more general characteristics are influenced by a wider variety of factors.

The issue of more closely approximating a norm of greater maturity and the advantages of that norm are less clear-cut. The results suggest that looking older has different advantages and disadvantages, depending on who one is around. The theory of relative deprivation predicted that early developers would be generally more satisfied, and all students would be more content, with their looks if they were in a school environment with a lower population of older children. In such a school early developers would have the advantage of attaining a scarce and desired end (older-looking appearance); late developers would find many peers in their same less desirable situation of looking more child-like. The data generally do not support this hypothesis. Although sixth-grade early developers are more satisfied with their height and figure in K-6 schools than K-8 schools, sixth-grade late developers are not more content in the K-6 school; and the seventh-grade findings are not at all in line with the predictions.

An alternate prediction was that children would desire to resemble the average peer in the school. According to this prediction, middle developers would be favored in general, but earlier developers would do better in a school with older children. It would be better to be physically more mature in an environment with more mature children. Again, the findings do not support this hypothesis. The picture is more complex. In K-8 schools satisfaction with height and satisfaction with figure development were actually lower both years for the taller and more developed early maturers. These girls were noticeably more mature looking than their classmates on these dimensions, especially in sixth grade, but were not very different from the older students in the school. The lower satisfaction of the K-8 early maturers on height and figure development dimensions may be due to the two negative comparisons these subjects make: They are too

mature with respect to their age-mates and are not mature enough with respect to their immediately available older peers. The ambiguity or the marginal status of the early developing girls in K-8 schools may be problematic. Although they look like older students in some ways, early developers are neither older nor are they probably as mature in other dimensions.

In sixth grade in the K-6 school, the early developing girl may be protected from this status ambiguity in a way that her counterpart in the K-8 school is not. The early developing sixth-grade girl in a K-6 school may see herself as looking more like an adult than any of her peers (a desirable state), but not be subject to any negative experiences that may be associated with special pressure to act more like an adult. This is particularly the case, since there are no older children in the school. By contrast, the K-8 early developer may find that older children, particularly boys, are pressuring her to adopt new more adult-like behaviors because she looks older. Our earlier work (Simmon *et al.*, 1979) as well as that of Douvan and Adelson (1966) has indicated that early dating can have a negative impact. In sum, the K-6 early developing sixth-grader is not immediately confronted with the comparison to older students in the same environment. Thus, the absence of a real comparison group may be just as important as its presence.

Another finding, which has been elaborated elsewhere (Simmons *et al.*, 1979), is the interaction of school context and pubertal development on global self-esteem and overall evaluation of looks in seventh grade. The results of these interactions are probably best attributed to the simultaneity of the changes in school and puberty. The middle maturing girls are going through the most dramatic pubertal changes in seventh grade, and those who are in junior high school have experienced environmental change. Girls who have been exposed to both changes simultaneously have the lowest level of self-esteem of any group and a more negative view of their looks than other junior high students.

A final comment worth further investigation has to do with the general linear versus curvilinear patterns of satisfaction with body-image. Petersen and her colleagues (Tobin-Richards *et al.*, 1983) have noted generally curvilinear relationships, with early maturers having the lowest amount of satisfaction, middle maturers having the highest, and late maturers having a middle level of satisfaction (see also Petersen and Crockett, this issue; Brooks-Gunn and Warren, next issue). Our previous results have indicated a more generally linear relationship, with early maturers having the least satisfaction and late maturers having the most. Although no statistical tests were run, the seventh-grade results in our study show strong linear trends in the K-8 environments and possibly weak curvilinear trends in the junior highs. The slight curvilinear trend in seventh grade, however, shows the middle developers at risk rather than favored.

The students in our 7-9 junior high schools would be more similar to one of the schools studied by Tobin-Richards *et al.* (1983), but not the other (a 6-8 school). The differences between the two studies may in part be due to differences in pubertal timing and in body image measures and in the context within which the satisfaction assessments were made. Further work needs to sort out the nature of these trends and their relationship to school context, since other factors may also be responsible. The Tobin-Richards *et al.* sample is a more middle class one than ours, and its context is suburban rather than urban.

In summary, this article has explored whether different aspects of satisfaction with one's body image and self-image can be seen as essentially context free in our society or context specific. While the results are not definitive because of limitations in our ability to test all of the intervening mechanisms, there is some support for both the power of the cultural ideal of thinness and the notion that the effect of early, middle, and late maturity on satisfaction with body image and self-esteem is at least partially dependent on the school context in which it occurs. Theories of relative deprivation do not appear to explain these results. Also, there is no clear indication that early adolescents regard physical maturity as an advantage because of the greater resemblance to adult appearance; nor is there an indication that children do better if, in their level of development, they resemble the grade or school average more. Factors that seem important are the overall cultural standards of beauty and the simultaneity of life changes. Early adolescents appear to have more favorable body and/or self-images if they approximate the cultural ideal of thinness and if they are not experiencing simultaneous environmental and physical changes. Future work needs to examine satisfaction with body image in relation to specific reference groups in order to gain a better understanding of the perceptions and values of the subjects at a wider variety of ages.

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