Changes in self-esteem during the middle school years: a latent growth curve study of individual and contextual influences

Jean Rhodes*, Jennifer Roffman, Ranjini Reddy, Katia Fredriksen

*Institute of Psychology, University of Massachusetts, 100 Morrissey Building, Boston, MA 02129-3393, USA
Niobe Way, New York University, USA*

Abstract

Hierarchical linear modeling (HLM) techniques were used to explore interactions among individual and contextual variables and their effects on initial self-esteem levels and changes in these levels across the three years of middle school in a large, diverse sample ($N = 1804$ students attending 23 schools). Interactions among race, social class, school socioeconomic status (SES), and contextual congruity were found to be particularly influential. Low-income European-American youth consistently experienced the lowest self-esteem levels and the sharpest declines during middle school. Social incongruity appears to play a crucial role in predicting such losses. These results highlight the need for further research employing similar techniques to explore how individual and contextual factors affect the development of self-esteem over the middle school years.
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Introduction

Adolescence is a period of dramatic change that often sets the stage for losses in positive feelings of self-worth (self-esteem). The identity struggles and egocentrism of

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* Corresponding author. Department of Psychology, University of Massachusetts, 100 Morrissey Bldg. Boston, MA 02129-3393, USA. Tel.: +1-617-287-6368; fax: +1-617-287-6336.
E-mail address: jean.rhodes@umb.edu (J. Rhodes).

adolescence can contribute to painful emotions, and a greater emphasis on peer relations often ignites youth's concerns about their own social skills and others' sincerity and allegiances (Way, 1998). These changes appear to be particularly difficult for young adolescents, who are often coping simultaneously with the onset of puberty and the transition to an unfamiliar and possibly stressful middle school setting (Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Negative views of the self, in turn, constitute a risk factor for emotional difficulties (e.g., depression) and engagement in maladaptive behaviors (e.g., delinquency) (Harter, 1999).

Steep declines in self-esteem, however, are neither universal nor inevitable, and a range of individual and contextual factors appears to influence both the direction and magnitude of change (Hirsch & DuBois, 1991). Individual background variables such as gender, race, and social class have been shown to play important roles in determining trajectories of adolescent self-esteem (DuBois, Burk-Braxton, Swenson, Tevendale, & Hardesty, 2002). For example, although early studies suggested that African-American and ethnic minority adolescents suffered from steeper declines in self-image relative to European Americans, more recent work indicates that the self-esteem of African-American adolescents is comparable to or even higher than that of European-American peers (Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002).

Gender can also affect changes in self-esteem during the early adolescent years. Girls consistently experience sharper declines than boys in their levels of self-esteem (Carlson, Uppal, & Prosser, 2000; DuBois et al., 2002). Interestingly, African-American girls appear to be less vulnerable to disturbances in self-esteem than European-American girls (Harter, 1999; Kling, Hyde, Showers, & Buswell, 2000; McRae, 1991; Zimmerman, Copeland, Shope, & Dielman, 1997). Several explanations have been given for these advantages, including the strong sense of ethnic identity among many African-American adolescents (Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002; Ward, 2000).

Socioeconomic status has also been positively associated with self-esteem, and to a greater degree for European Americans than for African Americans (Demo & Savin-Williams, 1983). This finding has been attributed, at least in part, to differences in coping strategies and levels of support from extended family and community members around issues of class and discrimination (Bowman & Howard, 1985; Fischer, Wallace, & Fenton, 2000). The positive association between self-esteem and income level might be mediated by middle-class adolescents' relatively higher levels of academic achievement, as positive performance in school can translate into the development of a more positive self-image (Campbell, Pungello, & Miller-Johnson, 2002; Featherman, 1980).

Beyond these individual and family background characteristics, a range of contextual factors can also influence adolescent self-esteem. For example, researchers have noted the particular vulnerabilities of rural youth, who tend to be more isolated and to have fewer educational, recreational, and other public health resources (Apostal & Bilden, 1991; Markstrom, Marshall, & Tryon, 2000; Murray & Keller, 1991). In addition, relative to urban and suburban communities, rural settings are characterized by greater isolation, fewer educational and other public health resources, and higher levels of poverty (Apostal & Bilden, 1991; Mayhew & Lempers, 1998; Murray & Keller, 1991). This, in turn, may

lead to lower aspirations and fewer opportunities for success (Housley, Martin, McCoy, & Greenhouse, 1987; Markstrom et al., 2000).

The "goodness of fit" or congruity between the adolescent and his or her overall context can also influence self-esteem. Early research on the development of self-concept indicates that adolescents who live in a social environment or go to a school in which their religious, racial or socioeconomic group is in the minority are more likely than those who do not experience such dissonance with their immediate contexts to have self-image problems (Rosenberg, 1965, 1979).

This claim has been borne out in more recent work suggesting that racial and socioeconomic dissonance can contribute to low self-esteem and poor academic performance (Gray-Little & Carels, 1997). Some studies have found African-American teenagers, for example, to have a higher opinion of themselves when they go to schools in which African-American students are a majority than when they attend predominantly European-American schools, where they may feel out of place and under pressure to play down their cultural heritage (Ward, 2000). Hispanic–Americans and European Americans also appear to be at higher risk for maladjustment when they are the racial minority in their schools (Kaufman, Gregory, & Stephan, 1990; Twenge & Crocker, 2002). Research on consonance and dissonance at the neighborhood level has indicated a self-esteem advantage for youth living in communities where they are part of the ethnic and/or religious majority (Duncan, 1994; Gerken, Allen, & Snider, 1984; Rosenberg, 1975). Youth experiencing racial, socioeconomic, or religious dissonance in their schools and communities can sense sharp differences between their own self-images and the ways they are perceived in their immediate surroundings. Once internalized, negative reflected appraisals can precipitate declines in self-esteem (Arunkumar, Midgley, & Urdan, 1999; DuBois, Bull, Sherman, & Roberts, 1998). In this sense, a dissonant school setting represents a "developmental mismatch" (Eccles & Midgley, 1989) between adolescents' heightened needs for positive peer appraisals and their surrounding indifferent or hostile school context (Clements & Seidman, 2002).

In summary, adolescence presents both challenges and opportunities, which interact with a range of individual and contextual factors to produce different pathways of self-esteem. Examining these pathways across youth of varying ethnicity, social class, gender, and social contexts may help to illuminate the extent to which changes in self-esteem are a function of individual and contextual factors.

To date, however, most of the studies cited above have relied on relatively small, homogeneous samples of adolescents. Additionally, the techniques that have been used to understand the nature of these variables have generally employed cross-sectional rather than longitudinal techniques, and have focused on correlational to mean level analyses of subgroups. Similarly, typical multivariate designs reflect tacit assumptions that adolescents who represent a wide range of adjustment and who follow multiple trajectories can be meaningfully grouped. Since young adolescents are adjusting to and coping with different challenges across middle school, such assumptions may be misleading. Although many researchers have examined one or two of these background variables at a time, the need for a comprehensive study including age, gender, race, sexual orientation and socioeconomic status, and the degree of dissonance or incongruity that youth experience in their middle-

school settings, remains. Finally, although self-esteem as a construct is acknowledged to be fluid, previous studies have treated it as static, thereby failing to observe changes in self-esteem over time. By using growth curve modeling to isolate the effects of various individual and contextual variables, we hope to provide a more comprehensive, contextual understanding of trends in adolescent self-esteem.

Based on the literature reviewed above, we expected that the middle school years would be marked by overall declines in students' self-esteem. Within this context, we expected that trajectories of self-esteem would vary according to students' gender, race, SES, and congruity with their social context. Females, European-Americans, lower-income adolescents, and adolescents who attend schools in which they are the racial or socioeconomic minority were expected to be at greatest risk for drops in self-esteem over the three years of middle school.

Method

Source of data

Data were drawn from a larger ongoing longitudinal evaluation study of young adolescents in middle schools.[1] The schools that participated in this study were all members of a statewide middle school association, which serves students from geographically, socioeconomically, and racially diverse backgrounds. Administrators in the schools agreed to participate in the study as part of a statewide school assessment plan. The current study focused on students who completed the survey over three consecutive years, 1995 through 1997. Of the original 2860 participants (across 30 schools), approximately 9% were excluded from the analyses because of missing demographic information. We also restricted our study to schools housing only sixth, seventh, and eighth grades, eliminating seven schools from the study. Furthermore, given their relatively low representation in the sample, we excluded the students who identified themselves as Asian American ($N = 93$), Native American ($N = 8$), and multi-racial ($N = 54$). A final data filter pertained to student responses. Only students with complete data for global self-esteem for all 3 years of the study were included in the final sample. These filters resulted in a 3-year longitudinal sample of 1804 students attending 23 schools. Enrollment in these schools ranged from 203 to 1243, with an average enrollment of 546 students per school. Among the students who were eliminated from this study as a result of these filters, 580 (55%) were male and 469 were female, and 273 (26%) received free or reduced lunch in 6th grade. Furthermore, 708 were European American, 125 were African American, and 61 were Latino.

Participants

The sample consisted of 1804 students who began sixth grade in 1995. Slightly over half of the sample was female (52.7%) and the majority were European American (87.6%). The remaining students identified themselves as Latino (7.4%) or African American (5%). Eligibility to receive free or reduced-price lunches was taken as a marker of low-income status. At the beginning of middle school, approximately 43.5% of the students reported receiving free or reduced-price lunches, ranging from 4.4% to 97.9%. Nineteen of the participating schools were classified as higher SES (based on school-reported percentages of enrolled students receiving free or reduced price lunches), only one of which had more than 40% minority students. Most (83.%) European American attended higher SES schools, whereas most 67% of African-American and Latino students tended attended lower SES schools.

Slightly over one-third of the students reported that their mothers had completed college (36.6%) and over half reported that their fathers had had two or more years of college education (17%) or had completed college (40%). The majority of the adolescents (83%) also reported living in two-parent families. The schools represented diverse geographical locales, with half in small town or rural areas. Among the lower-SES schools, three were in urban areas and one was in a rural area. Among the higher-SES schools, 9 were in urban areas and 10 were in rural areas.

Measures

Procedures

Surveys were administered to the students in their schools. Instructions and individual items were read aloud while the students read along silently. The informed consent of students and their parents was obtained and confidentiality was assured.[2]

Dependent variable

The outcome variable in the study was the eight-item global self-esteem subscale from the Self-Esteem Questionnaire (SEQ, DuBois & Felner, 1991; DuBois, Felner, Brand, Phillips, & Lease, 1996). Students rated statements such as "I like being the way I am," "I am happy with myself as a person," "I am as good a person as I want to be," on a 4-point

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[2] A two-tiered consent procedure developed and approved by the Institutional Review Board at the University of Illinois allowed the investigators to use passive consent procedures. The first step required each school to create a Parent Advisory Team (PAT) that was reflective of the children and families attending that school. The PAT was asked to review the surveys and consent forms that would subsequently be sent home to parents for their approval. The PAT was to consider community norms and values when reviewing the topics covered in the surveys, and they were to determine if the consent form accurately represent the goals and purposes of the study. Parents serving on the PAT team were also asked to serve as resources to other parents who might have questions supporting the surveys. Copies were kept in the school office for parental review. Once the PAT signed the advisory form, schools were required to send home letters to parents and were asked to return the form if they did not want their child to participate. The surveys were typically completed in two class hours and usually over a 2-day period. The schools determined the class to administer the survey. Some did homeroom while others used a class within the school day.

scale (strongly disagree to strongly agree) with higher ratings indicating higher levels of self-esteem. Internal consistency of the subscale for the three years was $\alpha = .83$, $\alpha = .83$, and $\alpha = .84$, respectively. DuBois et al. (1996) have reported a strong internal consistency of the global self-esteem subscale ($\alpha = .83$), as well support for its discriminant validity (mean $r = .55$) and convergent validity across self-report and interview scores (mean $r = .78$) (see also DuBois et al., 1998):

Variables describing students

Information on student gender, socioeconomic status, and race/ethnicity were included in the models. Gender was dummy coded, with girls coded as 1, boys as 0. Socioeconomic status of the student was derived from the student report of eligibility for free or reduced price lunch. This variable was taken as a function of family income. Students receiving free or reduced price lunch were coded as 1. Those receiving neither were coded as 0. Student race was coded as a dummy variable that reflected European-American (coded 1) and minority (coded 0) status. The minority group was comprised of students who identified themselves as African American or Hispanic.

Variables measured at the school level

The school level characteristics that were considered were geographical location and school SES.[3] The geographic location was indicated by a variable for rural status of the school, coded 1 for rural, 0 for urban. The school SES was a dummy coded variable for school level SES. The percent of lower-income students in the school was based on students eligible for free or reduced price lunches. For the purposes of the study, we classified as higher SES (coded 1) those schools that reported less than 40% of their students eligible for free/reduced-price lunches.

Description of analyses

The two primary aims of the current study were to describe the changes in global self-esteem for students from the sixth to the eight grades and to do so using student as well as school level characteristics. Hierarchical linear modeling (HLM; Bryk & Raudenbush, 1987, 1992; Raudenbush & Bryk, 2002) was used for the analyses. HLM methodology was ideally suited for the current study given the nested nature of the data set (longitudinal data collected from students nested within schools) and the multi-level nature of our research aims. In HLM terminology, we thus tested a three-level model. Each of these levels is further expanded upon below.

Level-1 model

Individual growth trajectories comprise the Level-1 model capturing the longitudinal nature of the current study. In the current formulation, this within-person model expresses the outcome variable as a linear function of time. Each student's development is defined

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[3] School minority status, a variable of interest, was not included in the models as it was highly correlated to school SES. We also needed to keep our Level-3 model relatively simple given the variance over only 23 schools.

by an individual growth trajectory that depends on a unique set of parameters (Bryk & Raudenbush, 1987, 1992) and is defined as follows:

$$Y_{itj} = \pi_{0ij} + \pi_{1ij}(time) + e_{itj}$$

In this equation, Y_{itj} is a function of the observed status of individual i at time t in school j, a growth trajectory or growth curve and residual error. The growth trajectory is defined by two parameters, an intercept or initial status factor (π_{0ij}) and a slope or growth rate factor (π_{1ij}). Since we were constrained by only three waves of data (an acceptable yet the minimum number required for the study of individual change in HLM), a linear trajectory in growth was selected for the current model. As the observations were taken during each academic year, this defined a time interval of $t = 1, 2, 3$. In order for the intercept to represent status in the sixth grade, we rescaled the time metric by subtracting one (so that $t = 0, 1, 2$). The intercept thus represented initial status, i.e., entry into middle school. The slope, on the other hand, represents linear rate of change over time (change in the self-esteem of each student at a steady rate from the sixth to the eighth grades). The errors (e_{itj}) are assumed to be independent and normally distributed with a common variance. The two growth parameters thus provide a summary of the patterns of change in global self-esteem (our outcome variable) across the three grades of the study.

Level-2 model

The individual growth parameters of the Level-1 model become the outcome variables in the Level-2 model. This between-student model allows an examination of student characteristics as predictors of the individual growth parameters. In the current model, three such student level characteristics were examined: student gender, race/ethnicity, and socioeconomic status. In addition, we included an interaction term to examine the moderating influence of race/ethnicity and socioeconomic status on the initial status and slope of global self-esteem.

Level-3 model

The variation among schools in the trajectories of global self-esteem is captured in the Level-3 or between-schools model. Each of the coefficients from the Level-2 model can be represented as outcome variables in the Level-3 model. School geographic location and school SES were utilized as school level variables to predict variation among schools in the Level-2 coefficients.

The first of the HLM models to be examined was an unconditional model that allowed the decomposition of variance of the initial status and slope into their within- and between-schools components. This model also allowed us to examine the correlations among the growth parameters and the reliability of effects at each level. We next extended this model in order to understand how personal characteristics of the student as well as the school ecological context interact with each other to influence the shape of the self-esteem trajectories. The final model thus included predictors at both the student and the school level. The coefficients from this final model are presented and discussed. All models were estimated using HLM 5.04 (Raudenbush, Bryk, & Congdon, 2001).

Results

Unconditional model

The unconditional individual growth model for global self-esteem was estimated first (see Table 1). The estimated overall mean initial status across schools was 3.10 and was significantly different from zero ($p < .001$). The overall mean growth rate across schools was $\beta = .07$ and $p < .001$. Students across all schools report declines in self-esteem at the rate of .07 units per academic year. The significant variance components reveal that there is significant heterogeneity among students within schools, both for initial status ($\tau_{\pi00} = .16$, $p < .001$) and slope ($\tau_{\pi11} = .01$, $p < .000$). Furthermore, significant variation was obtained between schools for mean status ($\tau_{\beta00} = .01$, $p < .000$) as well as mean growth rates ($\tau_{\beta11} = .001$, $p < .01$).

The percentage of variance that lies between schools for both the initial status and the slope were also computed (see Raudenbush & Bryk, 2002). For the initial status, 6% of the variance in global self-esteem lies between schools. For growth rates, on the other hand, 9% of the variance is between schools. Although these proportions are not large, it should be noted that the outcome is a psychological variable and these

Table 1
Three-level unconditional HLM model for global self-esteem

Fixed effect	Coefficient	SE	t ratio	p value
Average initial status G000	3.10	.03	122.018	.000
Average growth rate G100	− .07	.01	− 6.935	.000
Random variance	Coefficient	df	χ^2	p value
Within students (Level 1)				
Temporal variation	.17			
Students-within schools (Level 2)				
Individual Initial status	.16	1781	3,672.16	.000
Individual growth rate	.01	1781	2,052.91	.000
Between Schools (Level 3)				
School mean status	.01	22	86.55	.000
School mean growth rate	.001	22	44.85	.003
Percentage of variance between schools				
Initial status	6.17%			
Growth rate	9.0%			
Reliabilities				
Between students				
For the initial status	.53			
For the growth rate*	.12			
Between schools				
For the initial status	.71			
For the growth rate	.47			

The percentage of variance between schools was calculated as $\tau_{\beta pp} / \tau_{\beta pp} + \tau_{\pi pp}$.

proportions therefore represent a significant variance. Reliabilities for both the individual growth parameters as well as the school mean initial levels and slope are shown in Table 1. The HLM model also generates the correlation between initial status and slope. For both the between-students and between-schools models, a negative although low correlation between initial status and slope was obtained. These results suggest that students who begin with higher levels of self-esteem evidence steeper declines in self-esteem across middle school. This relationship also extends to the school level with schools with higher means in self-esteem showing steeper declines in self-esteem over time.

Conditional model

We next fitted a conditional model that allowed an estimation of the effects of student level characteristics and school level predictors on the shape of the trajectory of self-esteem.

The Level-2 model represents the variability of growth among students within schools. The focus was on assessing the importance of student personal characteristics such as gender, ethnicity/race, and SES on both the initial status and the growth rate of self-esteem. The model is represented as follows.

Initial status:

$$\pi_0 = \beta_{00} + \beta_{01}(\text{GENDER}) + \beta_{02}(\text{SES}) + \beta_{03}(\text{EUROPEAN AMERICAN})$$
$$+ \beta_{04}(\text{EUROPEAN AMERICAN*SES}) + r_0$$

Growth rate/slope:

$$\pi_1 = \beta_{10} + \beta_{11}(\text{GENDER}) + \beta_{12}(\text{SES}) + \beta_{13}(\text{EUROPEAN AMERICAN})$$
$$+ \beta_{14}(\text{EUROPEAN AMERICAN*SES}) + r_1$$

None of the demographic variables were centered in the model as our focus of interest was group differences. The constants (β_{00} and β_{10}) in the equations define the growth curve when all the explanatory variables in the respective equations equal 0. The coefficients for gender, β_{01} and β_{11}, thus represent the gender gap, i.e., the differences between girls and boys. β_{01} indicates the difference between the genders at sixth grade levels of self-esteem and β_{11} the difference in growth rates. Similarly, coefficients associated with SES (β_{02} and β_{12}) and European-American status (β_{03} and β_{13}) represent differences in initial status and slope for students from higher versus lower socioeconomic status (SES) and European American versus minority students, respectively. The coefficients for European-American SES represent initial status (β_{04}) and slope (β_{14}) of European-American students from a lower socioeconomic background (given the dummy codes for race/ethnicity and SES). In this model, no Level-3 predictors were included and, with the exception of initial status and slope, all other beta coefficients at the school level were assumed to be constant across schools.

The Level-3 model examines how the personal characteristics specified at Level-2 interact with the social context of the school to define a climate of personal vulnerability or strength for individual students. Two features of the school were of interest, school rural status and school SES. They were introduced as predictors of eight of the Level-2 coefficients as follows:[4]

Initial status:

$$\beta_{00} = \gamma_{000} + u_{00}$$

$$\beta_{01} = \gamma_{010} + \gamma_{011}(\text{HIGHER SES SCHOOL}) + \gamma_{012}(\text{RURAL SCHOOL})$$

$$\beta_{02} = \gamma_{020} + \gamma_{021}(\text{HIGHER SES SCHOOL}) + \gamma_{022}(\text{RURAL SCHOOL})$$

$$\beta_{03} = \gamma_{030} + \gamma_{031}(\text{HIGHER SES SCHOOL}) + \gamma_{032}(\text{RURAL SCHOOL})$$

$$\beta_{04} = \gamma_{040} + \gamma_{041}(\text{HIGHER SES SCHOOL}) + \gamma_{042}(\text{RURAL SCHOOL})$$

Growth rate/slope:

$$\beta_{10} = \gamma_{100} + u_{10}$$

$$\beta_{11} = \gamma_{110} + \gamma_{111}(\text{HIGHER SES SCHOOL}) + \gamma_{112}(\text{RURAL SCHOOL})$$

$$\beta_{12} = \gamma_{120} + \gamma_{121}(\text{HIGHER SES SCHOOL}) + \gamma_{122}(\text{RURAL SCHOOL})$$

$$\beta_{13} = \gamma_{130} + \gamma_{131}(\text{HIGHER SES SCHOOL}) + \gamma_{132}(\text{RURAL SCHOOL})$$

$$\beta_{14} = \gamma_{140} + \gamma_{141}(\text{HIGHER SES SCHOOL}) + \gamma_{142}(\text{RURAL SCHOOL})$$

As it can be seen, with the exception of β_{00} and β_{10}, each of these school level effects was further specified as non-randomly varying. Furthermore, given that variables in this model were not centered, the intercepts for both the initial status and the slopes provide information about a select group of students who were not of primary interest. No predictors were specified for these coefficients and our substantive focus was on the coefficients that represented the nature of student differences (i.e., gender, ethnicity, SES) between schools in self-esteem trajectories.

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[4] School grade size was a non-significant predictor in a preliminary analysis and was hence deleted from further analyses.

Table 2
Full three-level HLM model with school level predictors of global self-esteem

Fixed effect	Coefficient	SE	*p* value
Model for initial status			
Mean initial status of non-European			
American and higher-SES student, β_{00}			
Intercept, γ_{000}	3.31	.07	.000
Relationship between gender and status, β_{01}			
Intercept, γ_{010}	− .06	.08	.454
Higher SES school, γ_{011}	− .04	.08	.595
Rural school, γ_{012}	− .13	.05	.020
Relationship between student SES and			
status, β_{02}			
Intercept, γ_{020}	− .36	.10	.000
Higher SES school, γ_{021}	.26	.13	.040
Rural school, γ_{022}	− .02	.22	.910
Relationship between race/			
ethnicity and status, β_{03}			
Intercept, γ_{030}	− .21	.11	.050
Higher SES school, γ_{031}	.08	.09	.368
Rural school, γ_{032}	− .05	.05	.369
Relationship between			
European-American∗SES and status, β_{04}			
Intercept, γ_{040}	.18	.17	.273
Higher SES school, γ_{041}	− .14	.19	.439
Rural school, γ_{042}	− .03	.23	.892
Model for growth rate			
Growth rate for a non-European			
American and higher SES student, β_{10}			
Intercept, γ_{100}	− .11	.04	.014
Relationship between gender and rate, β_{11}			
Intercept, γ_{110}	− .06	.04	.184
Higher SES school, γ_{111}	.07	.05	.146
Rural school, γ_{112}	.01	.03	.827
Relationship between student			
SES and rate, β_{12}			
Intercept, γ_{120}	.15	.05	.004
Higher SES school, γ_{121}	− .13	.07	.063
Rural school, γ_{122}	.03	.12	.788
Relationship between race/			
ethnicity and rate, β_{13}			
Intercept, γ_{130}	.01	.06	.846
Higher SES school, γ_{131}	.01	.05	.919
Rural school, γ_{132}	.01	.03	.849
Relationship between			
European-American∗SES and rate, β_{14}			
Intercept, γ_{140}	− .26	.09	.005
Higher SES school, γ_{141}	.24	.10	.024
Rural school, γ_{142}	.02	.13	.891

Table 2 (*continued*)

Random variance	Coefficient	df	p value
Within students (Level 1)			
Temporal variation (e)	.17		
Students-within schools (Level 2)			
Individual initial status (r_0)	.16	1777	.000
Individual growth rate (r_1)	.01	1777	.000
Between schools (Level 3)			
School mean status (u_{00})	.004	22	.002
School mean growth rate (u_{10})	.001	22	.055

With the exception of the mean initial status (B00) and the growth rates (B10), all other coefficients at Level 3 were modeled as non-varying parameters at the school level.

Estimated fixed and random effects are presented in Table 2. Two school level characteristics, after adjusting for student personal characteristics, significantly influenced the levels of self-esteem at the beginning of middle school. Girls in rural schools report self-esteem levels .13 points lower than their urban counterparts ($\gamma_{012} = -.13$, $p = .02$). It also appears that lower-income students in higher SES schools report self-esteem levels .26 points higher than lower-income students in lower SES schools ($\gamma_{021} = .26$, $p = .04$), after adjusting for student poverty levels. The most substantively interesting finding was for the interaction term. The relation between European-American students' income and the slope of self-esteem appears to be dependent on the SES of the school. Lower-income European-American students in higher SES schools reveal significantly less steep declines in global self-esteem than lower-income European-American students in lower SES schools ($\gamma_{141} = .24$, $p = .02$).

To convey a clearer sense of the significance of this finding, Figs. 1 and 2 display the growth trajectories of students in higher SES, urban schools and lower SES, urban schools, respectively. Although the patterns are shown for urban schools, similar patterns can be assumed to exist for lower- versus higher-SES rural schools given the non-significance of school rural status ($\gamma_{142} = .02$, $p > .10$).

Contrary to expectations, there were no gender differences. The clearest difference with respect to self-esteem trajectories can be seen for European-American lower-income students attending lower SES urban schools (see Fig. 2). At the beginning of middle school, these students show no difference from their lower-income minority schoolmates with respect to self-esteem levels, but by the end of middle school, lower-income European-American students evidence the lowest levels of self-esteem, with steep declines throughout middle school. The lower-income minority students, on the other hand, actually show relatively stable levels of self-esteem and by the end of middle school appear to be faring marginally better than higher-income European-American students and as well as higher-income minority students in lower SES urban schools (see Fig. 2). The patterns in higher SES urban schools convey a slightly different story (see Fig. 1, Table 3). All students show declines in self-esteem across middle school. However, lower-income European-American students reported the lowest scores across all the groups. Higher-income minority students in higher
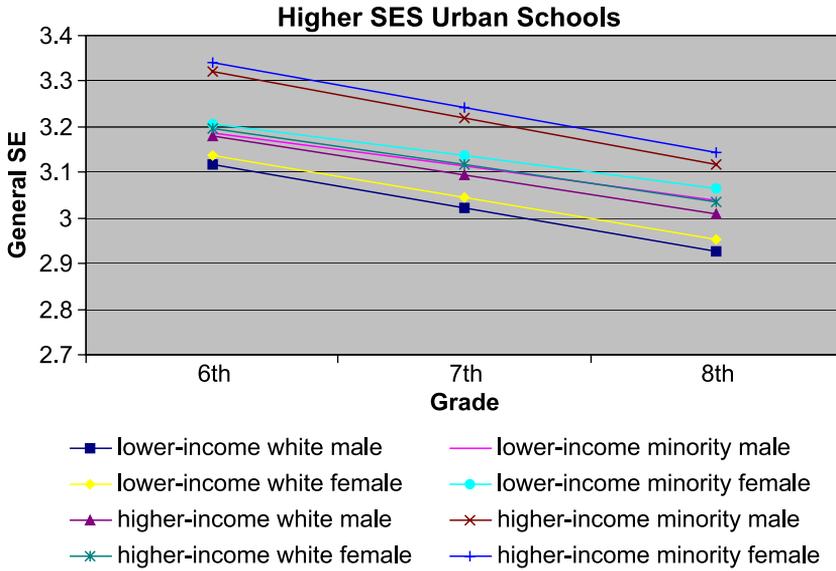
Fig. 1. Growth trajectories of self-esteem for students attending higher SES urban schools ($n = 9$). The trajectories were based on coefficients on the final model presented in Table 3. The SEQ is scored four-point scale (strongly disagree to strongly agree) with higher ratings indicating higher levels of self-esteem.
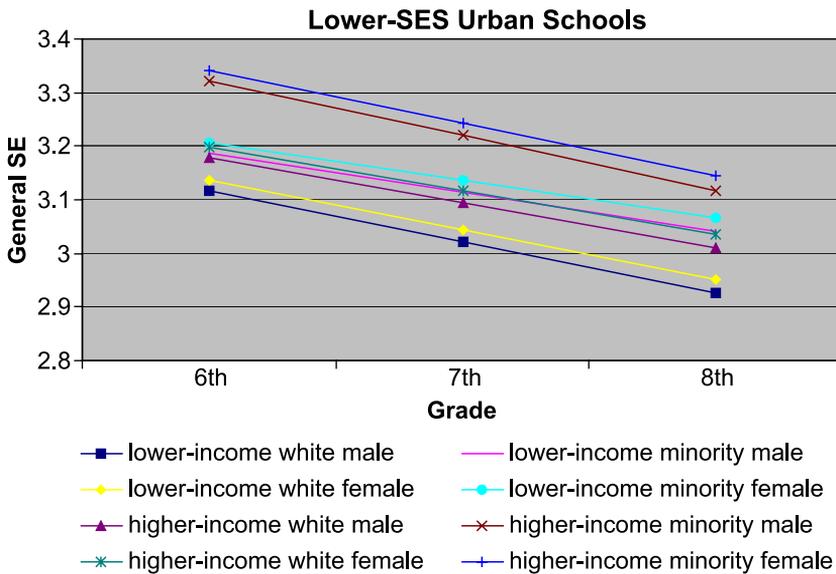

Fig. 2. Growth trajectories of self-esteem for students attending lower SES urban schools ($n = 3$). Trajectories based on coefficients on the final model presented in Table 3.

Table 3
Mean global self-esteem scores by gender in higher- and lower-SES urban schools

	Global self-esteem		
	6th	7th	8th
Higher SES schools			
Lower-income white male	3.118	3.022	2.926
Lower-income white female	3.136	3.044	2.952
Higher-income white male	3.179	3.094	3.009
Higher-income white female	3.197	3.116	3.035
Lower-income minority male	3.188	3.114	3.040
Lower-income minority female	3.206	3.136	3.066
Higher-income minority male	3.322	3.220	3.118
Higher-income minority female	3.340	3.242	3.144
Lower SES urban schools			
Lower-income white male	2.918	2.694	2.470
Lower-income white female	2.919	2.699	2.479
Higher-income white male	3.135	3.010	2.885
Higher-income white female	3.136	3.015	2.894
Lower-income minority male	2.979	2.995	3.011
Lower-income minority female	2.980	3.000	3.020
Higher-income minority male	3.269	3.127	2.985
Higher-income minority female	3.270	3.123	2.994

SES urban schools fared consistently better than the other groups in both the relatively higher and lower SES urban schools.

Discussion

The results of this study suggest that it is not only race, social class, or the material advantages of the school or community per se that influence developing self-esteem among adolescents, but also the students' congruence with the racial or socioeconomic environment of their schools. As predicted, social incongruity and poverty were both associated with lower self-esteem among youth. Two complex findings in the present study, concerning grade level and race–class interaction respectively, speak to the importance of social incongruity.

Although self-esteem declined for most youth, low-income, minority status (i.e., African American) students who attended lower SES schools did not suffer losses. Family and community support around issues of disadvantage may represent a strong positive influence for minority youth. For example, some African-American families are careful to sensitize their children to the role that racism and institutional barriers play in the material disadvantage they may witness among their race (Gray-Little & Hafdahl, 2000). This form of racial socialization has been associated with the enhancement of self-esteem among young African-American adolescents, regardless of academic or economic frustrations (Constantine & Blackmon, 2002). In addition, the belief that racism may be declining in modern American society motivates many African-American families to inspire in their

children a confidence that their own academic and professional potential exceeds that of previous generations (MacLeod, 1995).[5]

Rather than implying that living in poverty, being a member of a racial minority, or attending less affluent schools are protective, however, our finding suggest that these qualities might stand as proxy for another important, yet generally overlooked, element of these youth's experience—membership in the race–class majority of the school. For this subgroup, the protective influence of perceived belonging and congruity may have countered the forces that precipitate declines in self-esteem. Since this effect could not have been identified had any of the individual or contextual variables included in this study been omitted, this finding underscores the importance of including indices of social congruity in future explorations of youth self-esteem.

By contrast, lower-income European-American youth consistently experienced the lowest self-esteem levels and the sharpest declines. This may be due, in part, to cultural differences in the effects of poverty on self-esteem. Among European Americans, for whom the mainstream "American dream" of wealth and status has historically been more relevant and for whom opportunities remain more freely available, poverty may be a proxy for deeper family pathology, carry a greater stigma, and/or result in heightened social isolation. Low-income European-American youth face the difficult task of reconciling their families' experiences with conflicting cultural expectations (Gray-Little & Carels, 1997; Kaufman et al., 1990; Rosenberg, 1979).

The present findings suggest that racial incongruity may be an even more potent risk factor than income incongruity. Specifically, lower-income European-American students attending schools with other lower-income students, most of whom were African Americans, suffered steeper drops in self-esteem than lower-income European-American students attending schools with higher-income students. Rather than being comforted by the presence of other low-income students and families, these students, who as young adolescents are beginning to construct a vision of their adult identities and their place in the social strata, seem to benefit from the presence of classmates who are of the same race, even if they are from higher-income families (Hamm, 2000). Taken together, discrepancies among cultural expectations, family backgrounds, and still-forming individual beliefs and self-perceptions appear to create a uniquely stressful situation for lower-income European-American youth attending lower SES middle schools. This, in turn, contributes to striking deficits and downward trajectories in self-esteem across the middle school years.

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[5] In his exploration of the career and academic aspirations of European-American and African-American public housing residents, MacLeod (1995) found a similar pattern to the one reported in the present study. Low-income European-American youth were far more pessimistic about their futures than their African-American counterparts and experienced worse academic performance, greater involvement in delinquent behaviors, and lower self-esteem. These differences were attributed to the fact that many low-income African-American families believe that racism is declining in America, and therefore impart in their children a confidence in their potential to achieve both educationally and in future careers. Low-income European-American adolescents, on the other hand, find no alternative but to blame their own parents and grandparents for their failure to achieve in a society favoring European Americans over minorities. They internalize the responsibility for their poverty and the feeling of inevitability of future failure, disengaging from school and from the other behavioral norms of mainstream society before these institutions have the opportunity to reject them.

In light of our focus on racial differences, it was unfortunate that data from a larger proportion of minority students were unavailable. Drawing generalizations from a largely European-American, relatively well educated, middle-class sample to minority adolescents' experiences poses validity problems, particularly since a fairly small proportion of the minority participants experienced racial or SES incongruity in their schools. Although SES and race tend to be highly correlated among American students, future studies would benefit from the inclusion of more racially and economically heterogeneous schools. The relatively small proportion of minority participants also constrained our ability to make separate comparisons with the Latino and African-American adolescents and may have obscured important between-group differences. Indeed, the relatively high self-esteem that is often evidenced among African-American students is not necessarily characteristic of other racial minority groups (Twenge & Crocker, 2002). Larger samples of ethnic minority youth would also permit separate analyses within the Latino group. For instance, self-esteem differences among Mexican-American, Cuban-American, and Puerto-Rican individuals have been detected (Erkut, Szalacha, Garcia Coll, & Alarcon, 2000; Twenge & Crocker, 2002). Still, our tracking of over 200 minority students across the three grades of middle school led to some insights which could be further pursued in other studies.

We were also somewhat restricted by the availability of only three waves of data and the relatively small number of schools in the sample. This dearth constrained the number of explanatory variables that we could examine at Level 3. In addition, the present study did not take into consideration different domains of self-esteem but examined only the global construct. Future research should investigate the ways in which individual and school-level differences in initial levels and rates of change in self-esteem might change if subsets of the global construct were investigated, particularly as the components of global self-esteem with the greatest salience may vary with gender, race, or social class (Harter, 1999). Finally, future studies should explore additional contextual variables (e.g., school attitudes toward achievement, children's achievement incongruity), as well as possible mediators (e.g., racially motivated peer acceptance and rejection), that might account for these effects.

The results discussed above indicate several important implications both for future research and for the development of policy targeting the healthy development of youth. First, studies of adolescent self-esteem that bring only one or two explanatory variables into focus may ultimately obscure the field of vision. Future research needs to take into account all of the different contexts that influence youth's lives, especially SES and school SES, which allow for a consideration of adolescents' congruity with their social contexts. These variables have been studied less often in the past than gender and race, and yet appear to have an important influence on self-esteem levels across early adolescence. The HLM methodology used in this study lends itself particularly well to the challenges associated with studying multiple background variables and their impact on a dependent variable across several time periods. HLM is robust to the multiple two-level categorical variables used in the analyses, and to an uneven distribution across cells. More importantly, this methodology has the capacity to tease apart and integrate the effects of individual and the social contextual variables, resulting in a more realistic examination of human development.

The findings also have implications for future research and intervention. The low initial levels and the sharp declines in self-esteem experienced by lower-income European Americans are alarming, and likely contribute to negative outcomes in this population, including emotional and psychosocial difficulties, academic failure later in adolescence, delinquency, and joblessness (DuBois & Tevendale, 1999). Additional research on their risk and protective factors might inform interventions for this previously overlooked group. In addition, the concept of social incongruity between adolescents and their schoolmates or community has merits additional consideration. Practices that seek to create a more favorable school climate for such youth might go a long way toward enhancing the well-being of this high risk group of middle school students.

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