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INITIAL CLASSMATE ACCEPTANCE REDUCES FRESHMAN YEAR DECLINE IN
SENSE OF SCHOOL BELONGING AMONG URBAN HIGH SCHOOL STUDENTS

By

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ABSTRACT OF THE DISSERTATION

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Although research has examined the positive outcomes associated with sense of school belonging, relatively little empirical attention has been given to identifying the variables that influence or contribute to sense of belonging. There is some evidence from cross-sectional studies of middle school students that academic performance correlates with sense of school belonging. Furthermore, perceived classmate acceptance explained a significant amount of the variance in sense of belonging in one sample of middle schoolers. It is not yet clear, however, if (1) these relationships generalize to older students, and (2) if one or both of those correlates prospectively predict sense of school belonging during the key freshman year transitional period. A further question worth examining is if academic performance and perceived classmate acceptance prospectively predict sense of school belonging better than the reverse temporal sequencing (e.g., beginning of the year sense of belonging as a predictor of end of the year academic performance and classmate acceptance). The current study examined these questions in a sample of Black and Latino urban high school freshmen. Consistent with past research with younger and older adolescents, sense of school belonging declined over the course of the year in our sample of high school freshmen. With regard to predictive relations,

perceived classmate acceptance, but not academic performance, prospectively predicted end of year sense of school belonging, after controlling for initial levels of sense of belonging. Furthermore, when the reverse temporal sequencing of these variables was tested, sense of school belonging did not prospectively predict perceived classmate acceptance. These findings suggest that the positive relation between perceived classmate acceptance and sense of school belonging generalizes from younger adolescents (middle schoolers) to older adolescents (high school freshmen). Although no conclusions regarding causality can be drawn from our brief longitudinal study of Black and Latino high school freshmen, given that perceived classmate acceptance prospectively predicted end of year sense of school belonging, and the lack of support for the reverse temporal sequence, the role of perceived classmate acceptance in the development and/or maintenance of sense of school belonging during the key transition into high school warrants further empirical attention.

DEDICATION

It is difficult to express in words my gratitude and love for my parents, Michael and Thu Unga. Without you, none of my accomplishments would have been possible, without you there would be no sense of joy or pride.

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Introduction

Sense of school belonging (also called *school connectedness* or *membership*) is a variable that represents students' perceived connection to school (Anderman, 2003; Anderman & Anderman, 1999; Goodenow & Grady, 1993; Israelashvili, 1997; Maddox & Prinz, 2003; Roeser, Midgley, & Urdan, 1996; Urberg, Degirmencioglu, & Tolson, 1998; Urga, 2003; Walters & Bowen, 1997). Recently, evidence has accumulated indicating that sense of belonging to school serves a protective function against multiple negative developmental outcomes, including substance use, school delinquency and dropout, emotional problems, and engagement in health-risk behaviors (Barth, Dunlap, Dane, Lochman, & Wells, 2004; Bond et al., 2007; Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004; Dornbusch, Erickson, Laird, & Wong, 2001; Morrison, Robertson, Laurie, & Kelly, 2002; Resnick et al., 1997; Smerdon, 2002; Walters & Bowen, 1997; Wilson, 2004). It has been argued that sense of school belonging may lead to positive developmental outcomes because belonging (or bonding) to prosocial and conventional institutions inhibits problem behaviors, fosters an adoption of the institutions' values, and provides opportunities for rewards and incentives for initiating and maintaining involvement in the institution (Catalano et al., 2004).

Sense of school belonging, however, is not a stable trait that remains consistent over the years. Longitudinal studies show, in fact, that students' sense of school belonging can deteriorate over time (Anderman, 2003; Catalano et al., 2004; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001; Holt, 2007; McNeely, Nonnemaker, & Blum, 2002; Rumberger, 1995), with concomitant reduction in protective function. Although predictors of this decline have not been well studied, one variable that has been found to

ameliorate the decline in sense of school belonging over time is students' perceptions that their teacher promoted mutual respect among classmates (Anderman, 2003). These longitudinal studies, however, were conducted with middle school students. Holt (2007) recently documented a significant decline in sense of school belonging during freshman year in a selected group of urban high school students; she did not, however, examine predictors. Thus, more research is needed into this potential freshman year decline in sense of school belonging to (a) see if it occurs in a non-selected population and (b) to examine factors that may increase or predict it.

Chapter I: Review of Literature

As stated above, sense of school belonging has been found to be a significant protective factor against adolescent problems. Research has demonstrated consistent positive developmental patterns among students with high levels of sense of school belonging, including general mental health and lower rates of engagement in multiple health-compromising behaviors, including substance use, sexual intercourse, violence, delinquency, and suicidality (Bond et al., 2007; Dornbusch et al., 2001; Hawkins et al., 2001; Jenkins, 1997; Loukas, Suzuki, & Horton, 2006; Resnick et al., 1997; Shochet, Dadds, Ham, & Montague, 2006). These findings have resulted in the growing recognition of the importance of the relational aspect of school. The social development model (SDM) (Catalano & Hawkins, 1996) posits that the development of a bond to a socializing unit (e.g., school) will result in the internalization of the values of the unit, which in turn leads to positive behavioral outcomes (Catalano et al., 2004). According to the SDM, perceived opportunities for involvement in activities and interactions with others and perceived rewards from school involvement and interactions are processes by which students become attached to school (Catalano et al., 2004).

Belongingness, or a sense of being an included and valued member of a group, has gained empirical support as a critical dimension of the social educational context (Anderman, 2003; Anderman & Anderman, 1999; Bond et al., 2007; Catalano et al., 2004; Goodenow & Grady, 1993; Loukas et al., 2006; Maddox & Prinz, 2003; McNeely & Falci, 2004; Roeser et al., 1996; Sanchez, Colon, & Esparza, 2005; Urga, 2003). Goodenow (1993b) suggested that perceived belonging and support at school may be the single most critical factor influencing whether at-risk students stay in school and achieve

academically or not. Alienated students (those without a sense of school belonging and commitment to school goals) may feel there is little reason to remain in a school environment that they perceive as unwelcoming and unrewarding (Goodenow, 1992). Conversely, at-risk students who do feel a sense of connection and belonging with others in the school environment may experience socially rewarding and supportive interactions at school that protect them from dropping out or engaging in other maladaptive behaviors (Finn, 1989).

Academic Achievement and Sense of School Belonging

In an effort to address these theories empirically, Goodenow initiated a series of cross-sectional studies that examined the relation between sense of school belonging and academic achievement (Goodenow, 1993a, 1993b; Goodenow & Grady, 1993). Using the Psychological Sense of School Membership scale (PSSM), a measure developed specifically for use with adolescents in school belongingness research, Goodenow found a clear connection between sense of school belonging and several important school variables. In a sample of predominantly Caucasian (93%) middle school students, sense of school belonging was positively correlated with academic achievement (Goodenow, 1993b). Goodenow and Grady (1993) reported a similar relationship in a study of a diverse sample (32 % Black/African American, 27% Caucasian, and 36% Latino/Hispanic) of urban 7th to 9th graders. More recently, Urga (2003) conducted a cross-sectional study of racially diverse 7th and 8th grade students and reported a positive correlation between sense of school belonging and academic performance. Furthermore, sense of school belonging accounted for a significant proportion of the variance in academic performance in this sample (Urga, 2003). Anderman (2003) studied a sample of

predominantly Caucasian middle school students and found that, when examined concurrently, grade point average (GPA) predicted sense of school belonging. When examined longitudinally, however, GPA did not predict changes in sense of school belonging. Anderman (2003) did not examine the reverse temporal ordering (i.e., sense of school belonging as a prospective predictor of GPA). Bond et al. (2007) used longitudinal data from a large cohort of Australian students from metropolitan and regional areas; they found that sense of school belonging when measured in the 8th grade predicted standardized university entrance exam scores at the end of 12th grade. Bond et al. (2007) did not look at GPA as a measure of academic performance

Very little empirical attention has been given to sense of school belonging and its correlates in samples of older students. Sanchez et al. (2005) examined the relation between sense of school belonging and GPA in a cross-sectional sample of urban Latino 12th graders. Relations previously reported in cross-sectional samples of middle schoolers (Anderman, 2003; Goodenow, 1993a, 1993b; Goodenow & Grady, 1993; Urga, 2003) were not found in Sanchez et al.'s (2005) sample of older students; that is, sense of school belonging neither correlated with nor predicted GPA cross-sectionally. GPA was not tested as a predictor of sense of school belonging in this sample (Sanchez et al., 2005), leaving open the question of temporal sequence in the relationship between academic performance and sense of school belonging. To date, the extant literature is limited in terms of generalizability (across age and race) and ability to address the question of temporal sequencing of sense of school belonging and academic performance.

Perceived Classmate Acceptance and Sense of School Belonging

The peer group may be another source of the variance in students' feelings of belonging and connectedness to school. Peer relationships, as a construct, has long been established as an important contributor to child development and adjustment (Berndt, 1999; Parker & Asher, 1987; Prinstein & La Greca, 2004). Although the quality and functions of peer relationships may vary at each stage of development, the peer group remains an important source of socialization (Berndt, 1996). In addition to providing social norms and models for behavior, peers may also differentially bestow or withhold social reinforcement, and therefore can directly influence an individual's behavior and attitudes. Although it is an important and present variable at each stage of development, peer influence peaks during adolescence as the peer group becomes the preferred source of socialization and company for most adolescents (Berndt, 1996, 1999). Despite the salience of the peer group during adolescence, not all adolescents are successful at forging bilateral and supportive relationships (i.e., friendships) within a larger social network. Furthermore, some adolescents may experience difficulty even negotiating general acceptance from a peer group.

Peer group acceptance has typically been described and examined as a unilateral construct that encompasses the view of the group toward the individual, and reflects the level to which a child is generally liked by peers (Berndt, 1996). The individual's perception of his or her acceptance from a group, however, may be an important construct that has been overlooked. Consistent with the social development model, we propose that students who do not perceive themselves as accepted by classmates may not have a basis for perceiving available opportunities or rewards for involvement or interactions with others in the classroom environment. Despite these implications, the

actual association between perceived peer acceptance and sense of school belonging has not been well substantiated and has received minimal empirical attention. A clear connection between these two variables, however, was found in a cross-sectional study drawing from a diverse sample of 7th and 8th grade students (Urga, 2003). Urga (2003) found that perceived classmate acceptance accounted for approximately 60% of the variance in self-reported levels of sense of school belonging. Isakson and Jarvis (1999) also reported that perceived social support from friends predicted sense of school membership when examined concurrently (end of the 8th grade). This relation did not persist when examined prospectively (i.e., 8th grade perceived social support did not predict sense of school belonging at the end of the freshman year). Although no temporal relations have yet been found, the cross-sectional findings and the conceptual framework of the social development model make a strong argument for the need to explore further the association and the temporal order between perceived classmate acceptance and sense of school belonging. Furthermore, existing gaps in the literature can be addressed by examining these variables in samples of older adolescents.

The Current Study

Rationale and purpose. This study applied the theoretical advances of the social development model (Catalano & Hawkins, 1996), within the context of developmental transitions, to understanding what maintains sense of school belonging during the transition to high school and reduces its natural decline (Holt, 2007). The contribution of academic performance has been examined previously; few studies, however, have examined the contribution of peers (e.g., Isakson & Jarvis, 1999; Urga, 2003). Because adolescence is the developmental stage during which peer influence peaks and the peer

group becomes the preferred source of socialization (Berndt, 1999), this study examined whether students' perceived acceptance from classmates influences sense of school belonging over time, while taking academic performance into consideration.

The majority of the studies that have examined school belonging and related variables have examined middle schoolers from middle class populations, and employed cross-sectional designs with single points of data collection. The current study contributes to the literature by examining the effect of time on sense of school belonging, as well as exploring academic performance and classmate acceptance measured at the beginning of the freshman year as predictors of end of freshman year level of sense of school belonging in low income urban high school students. Multiple regression analyses were conducted to examine predictive relations after controlling for the beginning of freshman year level of sense of school belonging. This study examined the following research questions:

1. Do cross-sectional relations found in middle school students among academic performance, perceived classmate acceptance, and sense of school belonging generalize to older students?
2. Does sense of school belonging decrease during freshman year among an unselected general population of urban high school students?
3. Do academic performance and perceived classmate acceptance at the beginning of freshman year predict sense of school belonging at the end of freshman year, while controlling for initial levels of sense of school belonging?

4. Do the reverse temporal orders also hold (i.e., Do sense of school belonging and perceived classmate acceptance at the beginning of freshman year predict academic performance at the end of freshman year, while controlling for initial levels of academic performance; and, Do Sense of school belonging and academic performance at the beginning of freshman year predict perceived classmate acceptance at the end of freshman year, while controlling for initial levels of perceived classmate acceptance)?

Chapter II: Method

Participants

Participants were recruited from all of the freshmen in two separate small learning communities (SLCs) in an urban public high school in central New Jersey, each comprising from 68-110 students. Students in the same SLC have the same academic courses, are taught by the same set of teachers, attend classes in the same area of the school, and are led by the same school administrators. Participants for this study were recruited from among all of the freshmen assigned to two of the SLC's. The student body is predominantly African American/Black and Latino. The community is economically disadvantaged; approximately 68% of the students qualify for subsidized lunch.

A total of 156 students were surveyed at Time 1. Due to the large percentages of students who identified themselves as Latino/Hispanic (46%, $n=73$) and Black/African American (40%, $n=63$), and the small percentages of Caucasian/White (4%, $n=6$), Asian (1%, $n=2$), and students of other racial backgrounds (8%, $n=12$), only data obtained from Latino/Hispanic and Black/African American students were used for this study. These two nearly equal groups of students ($N=136$) allowed us to examine race/ethnicity as a potential moderator variable. Of the 136 Black/African American and Latino/Hispanic students surveyed at Time 1, follow-up data were collected from 112 students at Time 2. Only participants with complete Time 1 and Time 2 data were included in our analyses; thus our study sample is comprised of 86 students (57% female; 52% Latino/Hispanic) ranging in age from 13 to 16 years ($M=14.4$, $SD=.74$). Sample characteristics are summarized in Table 1.

Measures

Sense of school belonging. A shortened version of the Psychological Sense of School Membership Scale (PSSM) was used in this study. The PSSM is an 18-item self-report questionnaire designed to assess a student's perceived level of attachment to the school; the original scale was developed for use with early and middle adolescent students (Goodenow, 1993a). In an effort to reduce the length of the current study's questionnaire, a factor analysis was performed on the PSSM Scale using previously collected data from a sample of 7th and 8th grade students (Urga, 2003). All items with factor loadings of .6 or higher were retained; the original 18-item PSSM Scale was reduced to 13-items for this study. Sample items of the shortened version include: "Most teachers at this school are interested in me," and "People here notice when I'm good at something." Each item is evaluated on a 4-point continuum anchored by (1) "Really False" and (5) "Really True." After items with a negative valence are reverse scored, a scale score is obtained by summing the responses to the items and calculating the mathematical average; higher scores reflect greater levels of sense of school belonging. The PSSM has been used widely and has demonstrated both acceptable internal reliability and validity in diverse samples of middle school students (e.g., Anderman, 2003; Goodenow & Grady, 1993; Urga, 2003). Goodenow and Grady (1993) reported an internal consistency coefficient (alpha) of .80 for the PSSM Scale when used with a racially diverse sample of middle school students. Our study's shortened questionnaire obtained an alpha of .71 for both Time 1 and Time 2 data.

Classmate acceptance. Perceived acceptance from classmates was assessed using the 6 items drawn from the Social Support subscale of the School Success Profile (Bowen & Richman, 1997). We modified the original subscale by changing the term "friends" to

“classmates.” Sample items include: “I am encouraged to do well by my classmates,” “I can ask my classmates for help with my homework.” Each item is evaluated on a 4-point response continuum anchored by (1) “Disagree” and (4) “Agree”. A scale score is obtained by summing the responses to the items and calculating the mathematical average; higher scores indicate greater levels of perceived acceptance from classmates. Urga (2003) reported an internal consistency coefficient (alpha) of .80 for this measure when used with a sample of racially diverse middle school students. Alpha in the current study was .86 and .84 for Time 1 and Time 2, respectively.

Academic performance. The Academic Performance subscale of the School Success Profile (Bowen & Richman, 1997) is a three-item self-report questionnaire that assesses a student’s perception of his or her current academic performance. The first item reads, “What kind of grades did you make on your most recent report card?” Responses range from (1) “Mostly A’s and B’s” to (5) “Mostly D’s and F’s.” The second item reads, “How many D’s or F’s did you make on your most recent report card?” Responses range from (1) “None” to (4) “Three or More.” The final item asks students, “Compared to other students in your classes, how would you describe your grades?” Responses range from (1) “Better than most” to (3) “Worse than most.” The items are reverse scored and a scale score ranging from 1-4 is obtained by summing the responses to the items and calculating the mathematical average; higher scores indicate greater levels of perceived academic performance. Urga (2003) reported an internal consistency coefficient (alpha) of .77 for this measure when used with a sample of racially diverse middle school students. Alpha in the current study was .73 and .83 for Time 1 and Time 2, respectively.

Demographic variables. Three items were included to obtain demographic information. Students were asked to specify their gender, age, and racial/ethnic background.

Procedures

Following approval from the Rutgers Institutional Review Board, data collection began at the end of September 2004. Small teams of researchers visited groups of students during their Language Arts class and explained that although their parents had been notified and did not object, the decision to participate was the student's, and students who chose not to participate would not be penalized in any way. It was also explained that the questionnaire was confidential. All students were provided with the options of taking a version of the questionnaire that had been translated to Spanish, or having each item of the questionnaire read to them in Spanish by a member of the research team (in such cases, survey administration occurred in another location in the school). Twenty one students chose to take the Spanish version of the survey. Students who did not wish to participate were given crossword puzzles to work on while their classmates completed the questionnaire; students who participated in the study received two vouchers for the school store. Time 2 data collection began in May 2005 and was completed by June 2005.

Data Analytic Procedures

Correlations. Correlations among all of the study variables were performed on baseline (i.e., Time 1) data and between Time 1 variables and Time 2 sense of school belonging to (1) determine which variables to include in subsequent multiple regression

analyses, and (2) examine generalization of cross-sectional relations (Urga, 2003) to older students.

Time 1-Time 2 changes. Repeated measures ANOVAs examined if sense of school belonging, academic performance, and perceived classmate acceptance changed significantly from the beginning to the end of freshman year.

Predictive relations. Multiple regression analyses were conducted, which controlled for baseline effects of sense of school belonging. Demographic variables were also included as predictor variables. For example, to examine what predicts sense of school belonging at Time 2, gender, race, and baseline (i.e., Time 1) measures of sense of school belonging, perceived classmate acceptance, and self-report academic performance were entered into the equation simultaneously. The second step of the equation tested for interaction effects of race and gender with Time 1 sense of school belonging, perceived classmate acceptance, and self-report academic performance. This procedure was repeated to examine what predicts Time 2 academic performance and perceived classmate acceptance in separate regressions analyses to examine the reverse temporal ordering of the study variables (i.e., Time 1 sense of school belonging and perceived classmate acceptance as predictors of Time 2 academic performance; and Time 1 sense of school belonging and academic performance as predictors of Time 2 perceived classmate acceptance).

Power analysis. *A priori* power analyses indicated that a regression model with 5 independent variables would require a sample size of 91 participants to detect a medium effect size with $Power = .80$ for $p < .05$. Eighty four participants would be required to

achieve the same *power* in a regression model with 4 independent variables (Cohen, 1992).

Attrition analyses. Logistic regression procedures were employed to determine if the students who were included in the study differed significantly on any of the Time 1 measures from students who were excluded, either because they did not take the survey at Time 2 or because they had missing data.

Chapter III: Results

Attrition Analysis

Data were collected from 136 Black/African American and Latino/Hispanic participants at Time 1; follow up data were collected from 112 participants at Time 2. Only participants with complete Time 1 and Time 2 data were included in our analyses, yielding a sample of 86 participants. Therefore, this study's retention rate with regard to complete data is approximately 63%. The results of the logistic regression analyses were non-significant for each Time 1 measure. In other words, Time 1 measures of sense of school belonging, academic performance, and perceived classmate acceptance did not independently predict inclusion in the study.

Descriptive Statistics

Table 2 provides a summary of the descriptive statistics for Time 1 (Fall 2005) and Time 2 (Spring 2006) measures of sense of school belonging, academic performance, and perceived classmate acceptance.

Time 1-Time 2 Changes

Table 3 summarizes the means at Time 1 and Time 2 for the measures of sense of school belonging, academic performance, and perceived classmate acceptance. Repeated measures analyses of variance (ANOVAs) confirmed that the observed decline in sense of school belonging means from Time 1 (3.24) to Time 2 (3.18) is statistically significant ($F = 3.9, 1/85 \text{ df}, p < .05$). Academic performance also declined significantly ($F = 9.2, 1/85 \text{ df}, p < .01$). Perceived classmate acceptance did not decline from Time 1 to Time 2 in this sample of high school freshmen.

Correlations

Correlations between Time 1 predictors (sense of school belonging, academic performance, perceived classmate acceptance, gender, and race) and Time 2 sense of school belonging are summarized in Table 4. At Time 1, perceived classmate acceptance correlated significantly with sense of school belonging ($r = .46, p < .01$), but academic performance did not. Time 1 sense of school belonging ($r = .43, p < .01$), academic performance ($r = .30, p < .01$), and perceived classmate acceptance ($r = .42, p < .01$) correlated positively with Time 2 sense of school belonging. With regard to the demographic predictors, neither gender nor race was correlated with any other study variable.

Prediction of Time 2 Sense of School Belonging

Results of the multiple regression analyses examining if Time 1 academic performance and perceived classmate acceptance predict Time 2 sense of school belonging are summarized in Table 5 and Figure 1. The model as a whole accounted for 31% of the variance in Time 2 sense of school belonging ($R^2 = .31, F = 7.18, 5/80 \text{ df}, p < .001$), with Time 1 sense of school belonging accounting for 5% of the unique variance. After controlling for Time 1 sense of school belonging, Time 1 perceived classmate acceptance emerged as a significant predictor of Time 2 sense of school belonging ($\beta = .24, t = 2.25, p < .05$) and accounted for approximately 4% of the unique variance. With regard to Time 1 academic performance as a predictor of Time 2 sense of school belonging, only a trend was observed ($\beta = .19, t = 2.0, p = .07$). The final step of the equation tested for interaction effects of race and gender; the results of this step are not reported because the observed change in R^2 was not significant.

Exploration of Reverse Order Temporal Relations

Prediction of Time 2 academic performance. Results of the multiple regression analyses examining if Time 1 sense of school belonging and perceived classmate acceptance predict Time 2 academic performance, while controlling for Time 1 academic performance, are summarized in Table 6. Although the model as a whole was significant ($R^2 = .50$, $F = 16.15$, $5/80$ *df*, $p < .001$), Time 1 academic performance was the only significant predictor of Time 2 academic performance ($\beta = .79$, $t = 8.51$, $p < .001$) and accounted for approximately 45% of the unique variance. The test for interaction effects of race and gender did not yield significant changes in R^2 and, therefore, are not reported.

Prediction of Time 2 perceived classmate acceptance. Results of the multiple regression analyses examining if Time 1 sense of school belonging and academic performance predict Time 2 perceived classmate acceptance, while controlling for Time 1 perceived classmate acceptance, are summarized in Table 7. Although the model as a whole accounted for 21% of the variance in Time 2 perceived classmate acceptance ($R^2 = .21$, $F = 4.18$, $5/80$ *df*, $p < .01$), Time 1 perceived classmate acceptance emerged as the only significant predictor at Time 2 ($\beta = .41$, $t = 3.57$, $p < .001$) and accounted for approximately 13% of the unique variance. The test for interaction effects of race and gender did not yield significant changes in R^2 and, therefore, are not reported.

Chapter IV: Discussion

The current study was conducted in an effort to extend current understanding of sense of school belonging to freshmen transitioning into high school and to predicting its changes across time. Specifically, we examined (1) cross-sectional relations at the beginning of high school, (2) change in sense of school belonging as a function of time from the beginning of the freshman year to the end of the freshman year, and (3) short-term longitudinal influences of academic performance and perceived classmate acceptance measured at the beginning of the freshman year on sense of school belonging at the end of the freshman year, while controlling for initial levels at the beginning of the year. In this sample of unselected urban high school freshmen, a significant decline in sense of school belonging from the beginning of the freshman year to the end of the freshman year was observed. Taken together with similar findings in a sample of selected urban high school students (Holt, 2007), the current results suggest that a decline in sense of belonging during the freshman year may occur routinely in urban schools. Given that transitional periods typically present elevated risks and vulnerability for risky behaviors, developing methods of protecting sense of school belonging from decline is an area of much needed research. Before such efforts can be undertaken, however, we must reliably identify and understand what other school-related variables contribute to and predict sense of school belonging.

The current study found that Time 1 (beginning of freshman year) perceived classmate acceptance helped account for end of year sense of school belonging, after Time 1 sense of school belonging was controlled, in a context where Time 1 academic performance and gender and race/ethnicity were also considered. Thus, these longitudinal

findings on high school students are consistent with Urga's (2003) cross-sectional findings on middle school students. Findings from the current study that perceived classmate acceptance *prospectively* predicts sense of school belonging in a sample of urban and racially diverse high school students is, to our knowledge, a new finding in this area.

Isakson and Jarvis (1999) reported that, in a sample of Caucasian Midwestern students, perceived social support from friends predicted sense of school membership when examined concurrently at the end of 8th grade. This relation did not persist, however, when examined prospectively (i.e., 8th grade perceived social support did not predict sense of school belonging at the end of the freshman year). These disparate findings may be attributed to methodological differences. Whereas our initial measures were obtained at the beginning of the freshman year (when students were in a new high school environment), Isakson and Jarvis (1999) measured initial levels of social support from friends and sense of school belonging at the end of the grade 8 (when students were still in middle school). Thus, the friendships that the 8th graders in Isakson and Jarvis' (1999) study had at Time 1 may not have persisted into the 9th grade (e.g., friends may have transitioned into different high schools, friendships may have suffered as a result of scheduling or a larger school environment, etc). When this is considered, it is understandable that the relation between friend support and sense of school belonging that Isakson and Jarvis (1999) found in the 8th grade did not persist into the 9th grade.

Another methodological difference pertains to the measurement of peer variables. Isakson and Jarvis (1999) assessed social support from friends using Procidano and Heller's (1983) scale of Perceived Social Support from Friends (PSS-Fr); whereas our

study used a shortened version of the Social Support subscale of the School Success Profile (Bowen & Richman, 1997) and changed the terms from “friends” to “classmates.” Because our measure identified the specific subset of peers who students are exposed to most during the school day, perhaps our study is better suited to detect the peer relations that will most affect connectedness with the school. Finally, sample differences between the studies may limit comparability. Isakson and Jarvis (1999) studied a sample of predominantly Caucasian 8th graders from upper middle-income families in the Midwest, whereas we studied a sample of racially diverse 9th graders from lower-income families in the mid-Atlantic region. Thus, relations between classmate acceptance and sense of school belonging may not generalize from upper middle-income Caucasian students to lower-income racially diverse students.

Although no definitive conclusions can be drawn from our study regarding race as a predictive or moderating factor in the relation between sense of school belonging and perceived classmate acceptance, much can be said regarding the role of classroom peers in the development and maintenance of sense of school belonging during the transition to high school for males and females and Blacks and Latinos/as. Three main points should be highlighted regarding our finding that perceived classmate acceptance prospectively predicted sense of school belonging.

The importance of the interpersonal contexts, or relational aspect, of school is supported by a large body of evidence. Research has suggested that learning is not an individual pursuit but something that is achieved through interaction with others and, therefore, within an inherently social environment (Bain & Anderson, 1974; Flook, Repetti, & Ullman, 2005; Ryan, 2001; Trickett & Schmid, 1993; Walters & Bowen,

1997). Goodenow (1992) has argued that “learning, development, and education are so fundamentally embedded in a social matrix that they cannot be truly understood apart from that context” (p. 178). Therefore, the influence of the social context must be understood; this is especially pertinent when adopting a developmental perspective. In accordance with the social development model (Catalano, 1996), we argue that because the peer group is one of the primary and most influential sources of socialization during adolescence, it provides the most opportunities for involvement in school activities. In turn, the social reinforcement received for such involvement contributes significantly to developing and maintaining a sense of being an included and valued member of the school.

When we look specifically at the transition into high school, we can see natural opportunities for a student’s sense of school belonging to deteriorate: students are now in a larger, novel social and academic environment; they no longer spend the entire school day among the same group of classmates; they are now exposed to an increasing number of students with whom they have no prior social experience, and they are now forced to forge new relationships with classroom peers. Although teachers and other adults can provide opportunities and reinforcement for school involvement, given the ongoing exposure to other students as well as the ratio of students to adults in the school environment, it is intuitive to assume that students who perceive themselves as accepted by their new classmates will experience sustained and even perhaps increased feelings of belonging to the school environment. Alternatively, students for whom there are little perceived opportunities or reinforcement from classmates for engaging in activities at school may be at elevated risk for a deteriorating sense of belonging in school. The

results from the present study will help advance this hypothesis from an intuitive assumption to a meaningful empirical finding; however, replication in samples that include Caucasian, Asian American, and higher income high school students is necessary.

In our present and past research, we have argued that perceived classmate acceptance accounts for a significant amount of variance in sense of school belonging and may play a causal role in the development of sense of school belonging. Given the cross-sectional nature of our first study (Urga, 2003), we could make no more than tentative hypotheses regarding the temporal sequencing of these two variables. In the present study we were able to examine sense of school belonging and perceived classmate acceptance in a brief longitudinal design and, therefore, can draw tentative conclusions regarding the temporal sequencing. Although others (Anderman, 1999; Anderman, 2003) have argued that sense of school belonging plays a causal role in the development of peer acceptance, our current findings suggest the contrary. Perceived classmate acceptance measured at the beginning of the freshman year (Time 1) prospectively predicted sense of school belonging measured at the end of the freshman year (Time 2), even after controlling for Time 1 sense of school belonging. When we tested the alternative temporal ordering (i.e., Time 1 sense of school belonging as a predictor of Time 2 perceived classmate acceptance, in the context of academic performance), Time 1 perceived classmate acceptance emerged as the only significant predictor at Time 2. It should be noted, however, that our study was slightly underpowered. Therefore, a larger sample size may yield different findings with regard to sense of school belonging as a prospective predictor of perceived classmate acceptance.

In the current study, a trend was observed such that Time 1 academic performance related positively to Time 2 sense of school belonging. Although a positive cross-sectional relation has been reported in past studies of Caucasian and racially diverse middle school students (Anderman, 2003; Urga, 2003), when examined longitudinally, academic performance did not prospectively predict sense of school belonging (Anderman, 2003). Given that our study was slightly underpowered, examining this relation in a larger sample size will be necessary before drawing any conclusions regarding academic performance as a prospective predictor of sense of school belonging. Similarly, although the reverse temporal order of the variables (i.e., sense of school belonging as a prospective predictor of academic performance) was not supported in the current study, no firm conclusions should be drawn until the finding is replicated in a larger sample.

Our present study did not manipulate any variables in an effort to effect change in the others and, therefore, we cannot make any statements of causality. Our findings are consistent, however, with our theoretical argument and past cross-sectional findings that perceived classmate acceptance plays a causal role in the development and maintenance of sense of school belonging. We are encouraged to examine this hypothesis in a true experimental study. If our hypothesis is supported, this will have important implications for school based interventions designed to sustain and increase sense of school belonging by improving sense of acceptance by peers. Specifically, influencing peer relations so that students experience an accepting, respectful, and rewarding social environment in 9th grade classrooms may be particularly important in ameliorating or preventing the overall decline in sense of school belonging during the transition into high school.

In addition to the theoretical and empirical contribution our study has made to the existing literature, a methodological contribution is in our measurement of *classmate acceptance*. The overwhelming majority of empirical studies examining peer acceptance utilize objective measures of the view of the group toward the individual. For example, in addition to the peer nomination method (Coie & Dodge, 1983) and peer rating method (Asher & Dodge, 1986), in which a student's peer group acceptance is derived from nominations or ratings from his or her peers, teacher ratings of how well liked a student is by his classmates are also common. Measures of the student's subjective perception of his or her acceptance from the peer group, on the other hand, are not prevalent in the existing body of research. Consistent with our previous work examining classmate acceptance and sense of school belonging (Urga, 2003), in the present study we utilized a measure that asked students to report on their subjective opinions of how well accepted they are by their *classmates*. This change in measurement may account for our positive results, in contrast to the mixed findings reported in earlier studies.

Limitations

Several limitations of the current study should be noted. The small sample size due to the attrition rate resulted in limited power; a larger sample size would increase power and our ability to detect smaller effect sizes. Because we limited our analyses to participants with complete Time 1 and Time 2 data, our study is slightly underpowered to conduct a regression model with 5 independent variables. Thus, the analyses should be replicated with a larger sample. Although only a trend emerged regarding academic performance as a prospective predictor of sense of school belonging in our current study, the relation may emerge as significant with a larger sample size. Additionally, the brief

longitudinal design of our study may have limited our ability to observe relations between sense of school belonging and academic performance. Bond et al. (2007) observed their sample over the entire high school career and reported that school connectedness measured at the end of the 8th grade predicted higher university entrance scores at the end of 12th grade. A longer longitudinal study would allow for multiple points of measurement in order to learn more about mediating processes; whereas having only two points of measurement limits the interpretations that can be drawn. Because our study sample was comprised solely of predominantly low-income urban Black and Latino high school freshmen, it is not clear the extent to which our study's results are generalizable to other populations. Further research is required before conclusions regarding racial and socio-economic status effects can be made. The current study is also limited by its restriction to self-report data and thus reflects students' perceptions of their academic performance. The observed Time 1-Time 2 differences in students' perceptions of their acceptance from classmates may have reflected the different amount of exposure they had had to their classmates when measured at Time 1 and again at Time 2. It should also be noted that the measure used in this study to assess perceived classmate acceptance is limited by its focus on acceptance of positive school-related behaviors. Future work should target the development of a measure of classmate acceptance that is not limited to such academic areas. Finally, although the results of our prospective analyses are consistent with previous theory and research that perceived classmate acceptance may play a causal role in the development and maintenance of sense of school belonging, no firm conclusions regarding causality can be drawn. Studies employing an experimental, randomized control design, which measure changes in sense of school belonging as a

function of manipulations of perceived classmate acceptance are necessary to advance our understanding of sense of school belonging and the role that classmate acceptance plays, as a protective factor, in buffering against deteriorating sense of school belonging during the transition to high school, a key developmental period.

Summary

Although research has examined the positive outcomes associated with sense of school belonging, relatively little empirical attention has been given to identifying the variables that influence or contribute to sense of belonging. There was some evidence from cross-sectional studies that, in younger students (middle schoolers), academic performance and perceived sense of classmate acceptance correlate with sense of school belonging. Furthermore, perceived classmate acceptance explained a significant amount of the variance in sense of school belonging in one sample of middle schoolers. It was not yet clear, however, if (1) these relationships generalized to older students, and (2) if one or both of those correlates prospectively predicted sense of school belonging during the key freshman year transitional period. A further question worth examining was if academic performance and perceived classmate acceptance prospectively predicted sense of school belonging better than the reverse temporal sequencing (e.g., beginning of the year sense of school belonging as a predictor of end of the year academic success and classmate acceptance). The current study examined these questions in a sample of Black and Latino urban high school freshmen. Consistent with past research with younger and older adolescents, sense of school belonging declined over the course of the year in our sample of high school freshmen. With regard to predictive relations, perceived classmate acceptance, but not academic performance, prospectively predicted end of year sense of

school belonging, after controlling for initial levels of sense of school belonging.

Furthermore, when the reverse temporal sequencing of these variables was tested, sense of school belonging did not prospectively predict perceived classmate acceptance. These findings indicate that the positive relation between perceived classmate acceptance and sense of school belonging generalizes from younger adolescents (middle schoolers) to older adolescents (high school freshmen). Although no conclusions regarding causality can be drawn from our brief longitudinal study of Black and Latino high school freshmen, given that (1) perceived classmate acceptance prospectively predicted end of year sense of school belonging, and (2) the lack of positive findings for the reverse temporal sequence, the role of perceived classmate acceptance in the development and/or maintenance of sense of school belonging during the key transitional period into high school warrants further empirical attention.

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Table 1. *Sample Characteristics (N=86)*

	Male	Female	Total
Latino/Hispanic			
Number of Participants	19	26	45
Sample Percentage	22.1%	30.2%	52.3%
Mean Age (S.D.)	14.47 (.84)	14.48 (.82)	14.48 (.82)
Black/African American			
Number of Participants	18	23	41
Sample Percentage	20.9%	26.7%	47.7%
Mean Age (S.D.)	14.22 (.65)	14.22 (.60)	14.22 (.61)
Total Sample			
Number of Participants	37	49	86
Sample Percentage	43%	57%	100%
Mean Age (S.D.)	14.35 (.75)	14.36 (.74)	14.35 (.74)

Table 2. *Ranges, Means, Standard Deviations, and Alphas of Time 1 and Time 2 Sense of School Belonging, Academic Performance, and Perceived Classmate Acceptance (N=86)*

Measure	Time 1	Time 2
Sense of School Belonging (N=86)		
Range	2.2 – 3.9	2.2 – 4
<i>M</i>	3.24	3.18
<i>SD</i>	.38	.41
Alpha	.71	.71
Academic Performance (N=86)		
Range	1 – 4	1 – 4
<i>M</i>	2.71	2.50
<i>SD</i>	.77	.87
Alpha	.73	.83
Perceived Classmate Acceptance (N=86)		
Range	1 – 4	1 – 4
<i>M</i>	2.63	2.66
<i>SD</i>	.80	.75
Alpha	.86	.84

Table 3. *Comparisons of Time1 and Time 2 Means (N=86)*

	Means Time ₁	Time ₂	Repeated Measures ANOVA	Effect Size Partial Eta squared η_p^2
Sense of School Belonging	3.24	3.18	F(1, 85) = 3.9, p<.05	.02
Academic Performance	2.71	2.50	F(1, 85) = 9.2, p<.01	.10
Perceived Classmate Acceptance	2.63	2.66	F(1, 85) = .13, NS	NS

Table 4. *Correlations Between Time 1 Sense of School Belonging, Academic Performance, Perceived Classmate Acceptance, Gender, Race and Time 2 Sense of School Belonging (N=86)*

Variable	1	2	3	4	5	6
1. T1 Sense of School Belonging	_____					
2. T1 Academic Performance	.119	_____				
3. T1 Perceived Classmate Acceptance	.462**	.239*	_____			
4. T2 Sense of School Belonging	.426**	.296**	.422**	_____		
5. Gender (male=1)	-.182	-.049	-.187	-.192	_____	
6. Race (Black=1)	.051	-.094	-.088	.105	.017	_____

* $p < .05$ (2-tailed)
 ** $p < .01$ (2-tailed)

Figure Captions

Figure 1. Prediction of Time 2 Sense of School Belonging Across Time: Standardized coefficients (β weights) reported (N=86).

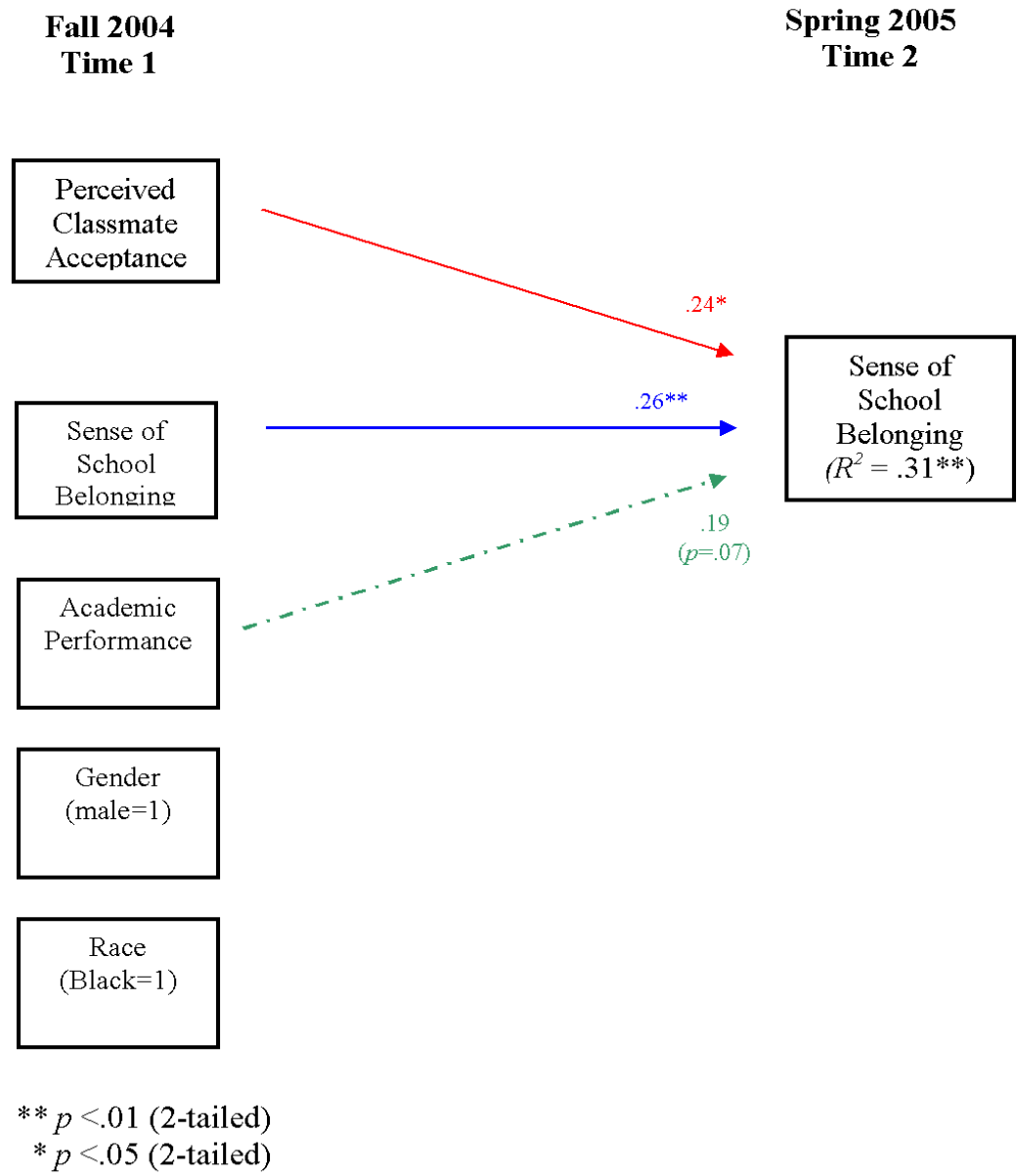


Figure 1.

Appendix A

Psychological Sense of School Membership Scale (PSSM Scale)

1. It is hard for people like me to be accepted here.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

2. Most teachers at school are interested in me.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

3. Sometimes I feel as if I don't belong at this school.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

4. People at this school are friendly to me.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

5. I feel very different from most other students here.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

6. The teachers here respect me.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

7. People here know I can do good work.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

8. I feel proud of belonging to this school.

Really False	Somewhat False	Somewhat True	Really True
1	2	3	4

Appendix A continued

9. There's at least one teacher or other adult in this school I can talk to if I have a problem.

Really False
1

Somewhat False
2

Somewhat True
3

Really True
4

10. Teachers here are not interested in people like me.

Really False
1

Somewhat False
2

Somewhat True
3

Really True
4

11. People here notice when I'm good at something.

Really False
1

Somewhat False
2

Somewhat True
3

Really True
4

12. Other students here like me the way I am.

Really False
1

Somewhat False
2

Somewhat True
3

Really True
4

13. I can really be myself at this school.

Really False
1

Somewhat False
2

Somewhat True
3

Really True
4

Appendix B

Classmate Acceptance Scale

1. Students in my classes are willing to listen to me without giving me advice or judging me.

Disagree	Slightly Disagree	Slightly Agree	Agree
1	2	3	4

2. I think students in my classes appreciate my efforts

Disagree	Slightly Disagree	Slightly Agree	Agree
1	2	3	4

3. I am encouraged to do well by my classmates.

Disagree	Slightly Disagree	Slightly Agree	Agree
1	2	3	4

4. I think that my classmates would comfort me and tell me that they are on my side.

Disagree	Slightly Disagree	Slightly Agree	Agree
1	2	3	4

5. My classmates get me to think about my values and feelings.

Disagree	Slightly Disagree	Slightly Agree	Agree
1	2	3	4

6. I can ask my classmates for help with my homework.

Disagree	Slightly Disagree	Slightly Agree	Agree
1	2	3	4

Appendix C

Academic Performance

1. What kind of grades did you make on your last report card?
 1. Mostly A's and B's
 2. Mostly B's and C's
 3. Mostly C's
 4. Mostly C's and D's
 5. Mostly D's and F's

2. How many D's or F's did you make on your last report card?
 1. None
 2. One
 3. Two
 4. Three or More

3. Compared to other students in your classes, how would you describe your grades?
 1. Better than most.
 2. About the same as most
 3. Worse than most.

Curriculum Vitae

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- | | |
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| 9/97 – 5/01 | University of California, San Diego, CA
Bachelor of Arts, Psychology
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