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# Pygmalion in the program:

# The role of teenage peer mentors’ attitudes in shaping their mentees’ outcomes

# Abstract

Cross-age peer mentoring programs, in which teenagers mentor younger children, have proliferated in recent years, yet there is disagreement about the effectiveness of such programs. Prior research suggests that both peer mentors' attitudes and the children's (or mentees') characteristics may moderate program effectiveness. This study tested whether teen mentors' attitudes about children interacts with their mentees' characteristics to moderate outcomes of cross-age peer mentoring. The sample included 221 high school volunteers, 205 mentees, and 182 control group youth. Latent profile analyses yielded two profiles of students who differed on academic performance, social acceptance, and classroom behavior, and which we therefore called academically connected and disconnected types. Outcome analyses revealed that the academically disconnected mentees who were paired with mentors holding relatively positive attitudes toward youth were more emotionally engaged in the mentoring relationship than disconnected mentees with more negative mentors and subsequently reported stronger relationships with their teachers at year's end than did the disconnected children in the control group. Implications for mentor selection and training are discussed.

# Pygmalion in the program:

# The role of teenage peer mentors' attitudes in shaping their mentees' outcomes

The number of cross-age peer mentoring programs, in which teenagers serve as mentors to younger children, has increased dramatically in the past ten years (Hansen, 2005; Karcher, 2007). Although high school-aged mentors were a rarity a decade ago (an estimated one in 25 was a teenager), the rapid expansion of mentoring programs in the U.S. has increased the demand for mentors and, consequently, the reliance on younger cohorts of volunteers (Moore & Boyle, 2007). Indeed, in Big Brothers Big Sisters of America, the nation's largest mentoring program, teenagers now represent a quarter of their volunteer mentors.

Unfortunately, this growth has outpaced available research on key programmatic factors, such as which young mentors to recruit and how to optimally match them with even younger mentees. Indeed, there remains controversy concerning whether cross-age, peer mentoring programs have *any* impact on participating mentees. Although some studies have found positive effects (see Karcher, 2007), a recent, large-scale study (Herrera, Kauh, Cooney, Grossman, & McMaken, 2008) found only one significant impact of the Big Brothers Big Sisters (BBBS) High School Bigs peer mentoring program. There also have been reports of negative effects for children participating in peer programs, including peer mentoring, that appear to result from the contagion of peers' deviant behavior (Akos, 2007; Dodge, Dishion, & Lansford, 2006).

## Cross-age Peer Mentoring and Positive Youth Development

Despite the potential for iatrogenic effects that can result under some conditions, peer mentoring has the potential to serve as an exemplary positive youth development (PYD) program. Cross-age peer mentoring has been reported to impact three of the five Cs" of PYD (viz., Competence, Confidence, Connection, Character, and Caring): mentees' social skills (competence), school and peer connectedness, and self-esteem (confidence; see Karcher, 2005, 2007); and mentors have reported fostering strong caring relationships with their mentees (Herrera et al., 2008; Karcher & Lindwall, 2003; Karcher, Nakkula, & Harris, 2005).

Cross-age peer mentoring also provides a venue for promoting developmental competencies of the mentor. Positive associations have been reported between serving as a peer mentoring and improvements in academic connectedness and self-esteem (confidence)(Karcher, 2009). In addition to the five competencies reflected in PYD theories (the 5 Cs), Lerner et al. (2005) have proposed a 6th C, contribution; participation as a peer mentor affords youth opportunities for contribution in a real, tangible, and immediate way.

However, peer mentoring programs can vary substantially in the level of screening, training, and support that is provided to young volunteers, the characteristics of the mentees and mentors, and the quality and longevity of the mentoring relationships (Karcher, 2007). This variability in program practices, the heightened possibility of iatrogenic effects, and its promise as a PYD intervention all suggest the need to better understand under what conditions it works.

Lerner et al. (in press) suggest that for mentoring to reach its potential as a PYD intervention, the field needs to understand what characteristics of mentors in what sorts of programs will be most effective to promote what facets of positive youth development in what sorts of youth. This question may be particularly critical to ask about peer mentoring. Therefore, this study sought to examine the types of mentees who benefit most from peer mentoring and the characteristics of teen mentors who yield the strongest benefits.

## The Importance of Mentors' Expectations

Previous research suggests that not all mentees benefit equally from peer mentoring and that not all high school mentors are equally adept at connecting with children. For example, mentees who enter programs with severe academic, behavioral or psychosocial difficulties may need more intensive, empathic mentoring than many volunteers can provide (Spencer, 2007). Indeed, findings from a meta-analysis of youth mentoring program evaluations suggest that mentoring is not as effective among youth who demonstrate individual risk factors, such as behavioral difficulties (DuBois, Holloway, Valentine, & Cooper, 2002; Smith, 2002).

Likewise, some teenagers appear better suited for volunteering in relationship-based interventions than others. For example, Karcher and Lindwall (2003) found that teen mentors who reported higher levels of concern and empathy for others (i.e., high scores on Crandall's Social Interest Scale) met with their mentees more regularly and were more likely to continue participation into a second year. Teen mentors who were high in social interest were more interested in working with mentees who were viewed by their teachers as more socially, academically and behaviorally at-risk. These findings suggest that, particularly with at-risk mentees, teen mentors' attitudes may interact with characteristics of their mentees to determine match success. High school students with more positive attitudes toward youth appear better suited for this form of volunteerism whereas those teens who are not particularly inclined to work with young children may be problematic.

This is consistent with findings regarding the most effective PYD programs. Roth and Brooks-Gunn (2003) suggest a key element of PYD programs is the manner in which such programs help program staff (i.e., mentors) convey their belief "in youth as resources to be developed rather than as problems to be managed" (p. 204). By extension, this suggests that those peer mentors who can identify strengths and positive qualities in their mentees may be most effective in their work.

## Developmental Variations in Self-Management and Motivations

Unfortunately, teenage volunteers are likely to vary widely in their attitudes towards and behaviors with younger children, and may be less able to mollify their reactions to youth misbehavior than are adult mentors. Some teens, for example, may hold negative attitudes toward younger children, perhaps stemming from inexperience, unreasonable expectations, or conflictual relationships with younger siblings (Yeh & Lempers, 2004). But, unlike older volunteers, teenagers may lack awareness of their biases or not yet have the cognitive capacity to regulate negative reactions triggered by their younger mentees. Limitations in cognitive capacities render adolescents less able to step back and take a perspective when interpersonal conflict arises in their relationships (Selman, 1980). Indeed, cognitive processes related to emotional regulation continue to develop throughout the adolescent years (Geidd et al., 1999). Kegan (1982) characterizes this limitation by suggesting that, while adults "have" their relationships which they can manage deliberately, teens are more "subject to" and defined by their relationships--that is, they are more likely to be "managed by" their relationships.

Teens volunteer to mentor for reasons that range from altruistic to more egoistic (Karcher & Lindwall, 2003). Teens may mentor to obtain academic credit or fulfill service learning requirements for their mentoring. As such, some teens may enlist in mentoring programs---not out of particular compassion for younger children---but for social reasons (e.g., to spend time with mentoring friends) or to achieve egoistic or self-interested goals (e.g., resume building)(see Herrera et al., 2008).

Mentors' attitudes also may affect the length of the match and their perceptions of the quality of the relationships. For example, Rubin and Thorelli (1984) found that as the number of egoistic motives for volunteering increases the length of volunteers' participation decreases. In addition, Karcher, Nakkula, and Harris (2005) found that teen mentors who were motivated by self-interest perceived their relationships less positively.

Other studies suggest that it is the fulfillment of expectations, not the nature of motivations, that matters most (Spencer, 2007; Stukas, Daly, & Clary, 2006). In particular, mentors who hold more positive views of youth and expect to have more positive experiences with their young mentees may forge longer, stronger, and more effective mentoring relationships than mentors with less positive attitudes and expectations. This might operate by positive mentors eliciting more positive behaviors, whereas mentors with negative expectations might elicit negative behaviors. These attitudinal biases are likely to be most salient when teens are paired with high-risk youth where a positively or negatively predisposed mentor's expectations can either counter or exacerbate children's pre-existing difficulties.

## Social Expectations and the Mentoring Relationship

Such processes may work, in part, through self-fulfilling prophecies and the interactions that result from them. Indeed, social psychologists have long argued that perceptions can elicit expectancy-consistent behavior in others (Jones, 1986; Jussim, Eccles, & Madon, 1996; Synder & Stukas, 1999). In some cases, these perceptions are positive, eliciting positive behavior, while in other cases they are negative and can have the opposite effect (Madon, Guyll, Spoth & Willard, 2004). In the classic study of study of teacher expectations, *Pygmalion in the Classroom*, Rosenthal and Jacobson (1968) found that, when teachers were influenced to hold more positive views of particular students' abilities, those children subsequently thrived to a greater-than-expected degree. The changes in students’ performance were directly related to their teacher’s increased encouragement, higher expectations, and concomitant support. Some studies have found that teachers' expectations interact with student risk factors to effect behavioral outcomes (Gill & Reynolds, 1999). For instance, teachers who relate equally well to all students tend to forge stronger ties, particularly with lower-achieving students, than those teachers who enter such relationships with negative biases (Kuklinski & Weinstein, 2000).

Similarly, the impact of mentoring on youth is viewed to reflect a process whereby the relationship alone is insufficient but instead must be of sufficient quality and duration before it leverages change on distal outcomes like academic achievement, attendance, attitudes towards teachers, school, or peers, and behaviors in school. Rhodes (2005) suggests that the extent to which the mentoring relationship is emotionally engaging (i.e., characterized by trust, empathy, mutuality) will largely determine the ultimate impact of the relationship on such distal outcomes. Thus the proximal outcome of having an emotionally engaged relationship and match of sufficient duration is a pre-requisite for these more distal cognitive, social and emotional outcomes.  Therefore, it is important to understand the ways in which mentor's expectations and perceptions of youth may affect both the proximal outcomes (e.g., emotional engagement and duration) and these distal outcomes (Karcher, Kuperminc, Portwood, Sipe, & Taylor, 2006).

In this study, we tested whether teen mentors’ attitudes about children interacted with their mentees’ characteristics to moderate outcomes of cross-age peer mentoring. Given previous research revealing associations between both the length and emotional engagement of matches and program outcomes (Rhodes & DuBois, 2008), with more salient effects emerging in the context of close, empathic bonds (Spencer & Rhodes, 2005), we hypothesized that mentors’ attitudes toward youth would affect the proximal outcomes of length and emotional engagement of relationship as well as the more distal outcomes typically affected by school-based mentoring such as attendance, behaviors, academic success and attitudes towards teachers and peers (Wheeler, Keller, & DuBois, 2010). We also expected that these outcomes would vary as a function of the baseline risk status of their mentees.

# Method

## Description of Participating Mentoring Programs

Participants were involved in school-based mentoring (SBM) programs in 71 schools affiliated with ten Big Brothers Big Sisters (BBBS) agencies across the U.S. These ten agencies were selected based on six criteria. Each agency had strong management-level leadership in place for at least three years and a SBM program operating for at least four years; served at least 150 boys and girls annually in its SBM program; used at least two different types of volunteer pools, such as high school students and employees from a local business; and had well-established relationships with participating schools (Herrera et al., 2007). Youth were recruited into the SBM programs mostly through teacher and school staff referrals during the spring prior to data collection and the fall of the first school year of the study (2004). The programs served from two to 97 youth, with an average of 22 participating youth in each program.

Mentoring matches varied in terms of time, location, and interaction focus; but otherwise received similar programmatic supports. About half of the programs (49 percent) operated during the school day, 47 percent took place after school, and a small percentage (four percent) held meetings both during and after school. Program expectations varied depending on the BBBS agency and the school, and matches had some flexibility in choosing activities. But all began their relationship at school and almost all meetings occurred on school premises during the school year. Most matches were expected to meet once a week for about an hour. Supervision of youth (about once a month for the first year of the relationship) was provided by BBBS staff.

## Participants

**Children: Full study sample**. Participating children were in 4th through 9th grades (9 to 16 years old) at baseline; provided parental consent to participate; and were not referred to the program due to a crisis. Ultimately, 1,139 youth met these criteria and were accepted into the program: 565 were randomly assigned to the treatment group, in which they were able to be matched with mentors; and 574 were assigned to the control condition in which they would not be matched until the completion of the study.

**Children: Sample from schools where peer mentoring was conducted.** Of the 71 schools involved in the study, 41 included peer mentoring. The present sample was drawn from these 41 sites. Specifically, we drew on data from 205 children (92 boys; 113 girls) in the treatment group who were paired with high school mentors (and had self- and teacher-reported data at the baseline assessment), and from 182 children (80 boys; 102 girls) in the control group who attended schools that included peer mentoring (Table 1). Most (76%) of the mentees in this subsample were in elementary school. Because younger children were assigned to have teenage mentors, the mentees (and control group children) in this study were younger than the mentees (and control group children) mentored by adults. Herrera et al. (2008) state "although high school mentors tended to be placed in schools with less needy students, programs generally did not try to match their least needy children with the high school Bigs (mentors)" (p 7). Teen mentors were less likely to be matched with a mentee of the same sex (74% vs. 87%) but were more likely to have the same ethnic/racial background as their mentees (56 vs. 28%).

**Mentors.** This study focused on the 221 high school volunteers who completed baseline surveys when they were recruited into the program (37 males; 168 females). Data from 16 high school mentors were excluded from the analyses that combined all participants because those 16 mentees with whom high school mentors were paired did not have teacher-reported data. About a quarter (26 percent) of participating matches were cross-gender, all of which consisted of a female mentor with a male youth. Forty-three percent of matches were cross-race. Of these 66% were white mentors with minority youth, 19% were minority mentors with youth from different ethnic backgrounds, and 15% were minority mentors and white youth. Teen mentors were more likely to be female than were adult mentors (97 vs. 66 %), to be white (81 vs. 74%), to have mentored children informally in the past (47 vs. 26%), but less likely than adults to have had prior formal experience as a mentor (18 vs. 34%).

## Procedures

Data were collected at each of three assessment waves: for the entire sample, at baseline (i.e., the beginning of the 2004-2005 school year) 100% of youth and 89% of their teachers were surveyed); at the 9-month assessment in the spring of that school year, 94% of youth and 84% of their teachers were surveyed; and the 15-month assessment in late fall 2005, 85% of youth and 81% of their teachers were surveyed. Mentors were also surveyed at these three time points with response rates of 93%, 87% and 82%. Because close to half of the youth in the treatment group were no longer receiving mentoring by the last assessment wave, only outcomes from the 9-month assessment are analyzed in this report.

## Measures

**Attitudes Toward Youth in Mentor's Community** (Princeton Survey Research Associates, 2000). The primary mentor characteristic included as a moderator in this study was mentor's attitudes towards youth. This scale asks mentors to rate how many "kids in your community" could be characterized by five positive and two negative (reverse scored) indicators of youth development: work hard at school, respect adults, are trouble-makers (reversed scored), are fun to be around, expect things to be handed to them (reversed scored), try to do their best, and are interested in learning. The scale responses include 1 = *none*, 2 = *very few*, 3 = *some*, 4 = *many*, and 5 = *all or almost all*. Therefore, when all 7 items are averaged, scores above 3 suggest a positive or optimistic view of the youth mentors expect to encounter, while scores 3 or below suggest a more negative or pessimistic view of the youth the mentors expect to encounter through their involvement in the program. This scale was provided only once, before mentors met their mentees; internal consistency was α = .78.

**School connectedness.** *The Hemingway: Measure of Adolescent Connectedness* (Karcher, 2008) six-item *Connectedness to School* subscale was used to compare the profiles generated from the latent class analyses to determine if the groups differed on this variable. It focuses on the importance youth place on school and how actively they try to be successful in school. The scale was sufficiently reliable, α = .70, and has demonstrated good validity evidence.

**Latent profile analysis grouping variables**. In the plan of analyses described below, we indicate our first step is to identify profiles of mentees based on key youth characteristics. To do this, we included three variables commonly used to identify children for mentoring program participation measured at the baseline and 9-month assessment: Overall academic achievement, social acceptance in the classroom, and the degree of youths' negative contributions to the class.

***Overall academic achievement*** (Pierce, Hamm & Vandell, 1999). This was reported by teachers as a composite measure of academic competence, rated on a 5-point scale, ranging from 1 = *below grade level* to 5 = *excellent*.

***Social acceptance.*** This was assessed by taking the average of teachers' responses to three items drawn from Harter's (1985) scale (e.g., "This child is popular with others his/her age"). Items were scored on a 4-point scale, ranging from *strongly disagree* to *strongly agree* (α's = .89, .91).

***Negative contribution to the classroom*** (Herrera et al., 2007). This scale consisted of the average of 5 items rated by teachers on a 4-point scale, ranging from *strongly disagree* to *strongly agree*, that reflect the child's negative contribution to the quality of the classroom (e.g., "This child makes it hard for other students to learn"; α's = .93, .94).

**Proximal outcomes.** To assess whether mentor and youth characteristics interacted to affect proximal measures of program impact, we assessed two aspects of the mentoring relationship found in prior research to predict positive program impacts (i.e., match quality and length) (DuBois & Rhodes & 2006): Youth emotional engagement and match length.

***Youth Emotional Engagement***. Emotional engagement in the mentoring relationship was measured using an eight-item youth-reported scale including items such as, "When I'm with my mentor, I feel excited" (Jucovy, 2002). The items were scored on a four-point scale, ranging from 1 = *not at all true* to 4 = *very true* and a mean score was calculated, with higher scores indicating higher levels of emotional engagement (α = .85).

***Match length.*** This was defined as the number of days between the start date of the mentee's most recent mentoring match and the date when the mentee completed the survey at the end of the school year at the 9-month assessment.

**Distal outcomes**. To estimate how the mentors' views of youth related to the outcomes of SBM, we selected a subset of all outcome measures reported in Herrera et al. (2008). We utilized six outcome measures of the 31 possible variables available for analysis. To select these six, we used three primary selection criteria. We chose outcomes (a) on which positive effects of SBM had emerged consistently in prior research (Wheeler, Keller & DuBois, 2010), (b) that had been reported in both the adult and peer mentoring literatures as influenced by program participation (Herrera et al., 2008; Karcher, 2007), and (c) which reflected either unequivocally positive outcomes (e.g., increased school performance, attendance) or outcomes that may reflect iatrogenic effects resulting from deviancy training (e.g., peer acceptance, classroom misconduct).

Therefore, we narrowed our analyses of distal outcomes to the following six outcomes (all were collected at both assessment waves).

***Teacher-student relationship quality*** (Pianta, 1991). This was assessed by asking teachers to respond to 15 items on a 5-point scale, ranging from *definitely does not apply* to *definitely applies*, on the Student Teacher Relationship Scale (STRS) (e.g., “I share a warm relationship with this child”; both α’s = .89).

***Prosocial behavior*** (Ladd & Profilit, 1996). Teachers’ reports of youths’ prosocial behavior were assessed using the 8 items on the "Prosocial with peers" scale of the Child Behavior Scale, except that the word peer was substituted with "classmates" to narrow the place of concern regarding peer interactions. It used a 4-point scale ranging from *never* to *very often* (e.g., “How often is this child cooperative with classmates?”; α’s = .90, .93).

***Truancy.*** This was measured using a single teacher-reported item that indicated how many times the child had been absent from school in the previous four weeks.

Other distal outcomes include the teacher-rated *overall academic achievement, social acceptance among peers*, and *negative contribution to the classroom* scales described above. These three variables were used both as both grouping variables and distal outcomes in analyses.

## Plan of Analysis

Our first set of analyses was designed to identify the youth characteristics profiles that would be used in the analysis of treatment-person interactions on the proximal and distal outcomes described above. For these analyses we utilized characteristics that frequently are used by mentoring program staff when identifying youth as candidates for mentoring interventions, such as classroom behavior. For comparison purposes, we conducted these characteristics latent profile analyses separately, first for those children who received a mentor (i.e., treatment youth, or mentees) and, again, secondly for the children who were on the waiting list to receive a mentor (i.e., control children).

For these analyses we used a person-oriented approach to examine different patterns of association among these children's characteristics at the baseline assessment. This approach, latent profile analysis, considers multiple relevant characteristics simultaneously, as they come together to form a unified whole (Bergman & Trost, 2006; Magnusson, 1998). The approach allowed us to identify relatively homogenous sub-groups of mentees based on a constellation of characteristics. Rather than treat these characteristics as independent factors, this procedure enabled us to group youth according to their natural patterns of characteristics. These profiles then served as moderators in the second set of analyses in which we tested treatment X person interactions in cross-age peer mentoring.

Profiles were grouped using mixture modeling, based on three variables commonly used to identify youth for mentoring program participation: overall academic achievement, negative contribution to the classroom, and social acceptance. Mixture modeling (also referred to as latent profile analysis) assumes that the data are generated by a heterogeneous mixture of underlying probability distributions for K subsamples (or clusters), such that each cluster distribution is characterized by its own unique set of parameters. We chose a normal mixture modeling approach for several reasons.  First, mixture modeling posits a specific model for the data, and then estimates data parameters using maximum likelihood or Bayesian procedures (Whiteman & Loken, 2006). Second, mixture modeling provides indices of statistical fit (e.g., AIC [Akaiki Information Criterion]), which help determine the optimal number of profiles in the data. Finally, in mixture modeling individuals are assigned probabilities of group membership, instead of being assigned to one group with certainty. The sensitive nature of these probabilities is one of the main benefits of using mixture models over other person-oriented methodologies.

We relied on full-information maximum likelihood estimation (FIML), as implemented in Mplus (Muthén & Muthén, 2008), to handle missing data, so that data from all cases were included in the identification of the membership probabilities. Before analyzing the data, all three indicator variables (i.e., youth characteristics) were standardized so results could be more readily interpreted. To determine the best solution, we examined multiple mixture models in Mplus. Because indicators roughly approximate a normal distribution, it was not appropriate to estimate more profiles than the number of indicators (e.g., a four-profile solution) (Loken & Molenaar, 2008).

Subsequently, in our second set of analyses we test our hypothesis regarding the association between youth characteristics and program outcomes. We conducted three sets of hierarchical regressions and ANCOVAs that examined the role of child and mentor characteristics on proximal and distal outcomes. The proximal outcomes were two indicators of relationship quality: length of match and mentees’ reports of their emotional engagement in the match. The distal outcomes were six end of year outcomes including teacher-student relationship quality, prosocial behavior, truancy, and the end of year assessments of the three grouping variables described above.  First we tested whether the latent class profiles for children were associated with variability on the proximal and distal outcomes described above. Second we examined the associations between mentor attitudes and proximal and distal outcomes described above. Finally, we tested whether the effects of a peer mentoring on the proximal and distal outcomes for different profiles of children were moderated by mentors' baseline views of youth. Specifically, we compared proximal (mentoring-relationship specific) outcomes for the mentees in both profiles who were paired with either mentors holding relatively positive or negative baseline views of youth, and examined distal outcomes differed across these four subgroups of mentees and whether they differed from control group children of the same profile.

## Results

### Identifying Profiles of Youth and Comparing Them at Baseline

We estimated two profiles, one for the mentored youth sample and another for the control group children sample, based on the following criteria: (a) the two-profile solution had the lowest AIC and sample-adjusted BIC fit criteria; (b) each profile had an adequate sample size; (c) the solution was determined to be sufficiently stable; and (d) the solution made intuitive sense. Average probabilities of membership within each of the profiles were high for both mentored youth (.97 and .91, respectively) and control youth (.99 and .90 respectively). To create these profiles, we used membership probabilities to assign each individual to one profile, thus allowing covariate analyses to be computed within an ANOVA framework. We chose this strategy because the average latent profile probabilities for profile membership were acceptable.

Among mentored children, we identified two patterns of baseline characteristics. Consistent with previous person-oriented research (e.g., Kan & McHale, 2007), for each of the indicators, relatively low scores were ≥ 1/3 standard deviation below the mean; average scores were < plus or minus 1/3 standard deviation from the mean; and relatively high scores ≥ 1/3 standard deviation above the total mean. Profile 1 ($n = 118$) was characterized by average overall academic achievement but low social acceptance at school and more frequent negative contributions to the classroom (Figure 1). Profile 2 ($n = 87$) was characterized by high overall academic achievement and social acceptance at school, and less frequent negative contributions to the classroom. These two profiles seem to reflect degrees of engagement and success in the school setting, so we named them "Academically Disconnected" and "Academically Connected" children. To test this rationale, we compared these two groups on the connectedness to school scale described above. The academically disconnected children ($M = 3.12$, $SD = .59$) scored significantly lower than the academically connected children ($M = 3.42$, $SD = .49$), $F(1, 203) = 14.68$, $p < .001$, $\eta^2 = .067$. There were proportionately more girls ($n = 57$) than boys ($n = 30$) in the connected group (Profile 2) compared to the proportion of girls ($n = 56$) and boys ($n = 62$) in the academically disconnected group (Profile 1), $X^2 = 6.60$, $p < .05$. Academically connected mentees also were significantly younger ($M = 10.41$, $SD = .86$) than academically disconnected mentees ($M = 10.98$, SD = 1.19), $t = -3.792$, $p < .001$ (Table 2).

We used the same procedures and criteria for determining relatively high and low scores for each of the indicator variables among the children in the control group, and the pattern was very similar. For these children, we also identified two patterns of baseline characteristics. Profile 1 ($n = 108$) was characterized by average overall academic achievement and social acceptance in school, but high negative contribution to the classroom (“Academically Disconnected”) (Figure 2). Profile 2 ($n = 74$) was characterized by high overall academic achievement, average social acceptance in school, and low negative contribution to the classroom (“Academically Connected”). The academically disconnected control group children ($M = 3.05$, $SD = .60$) scored significantly lower than the academically connected control group children ($M = 3.30$, $SD = .53$), $F(1,180) =$

8.27, $p < .005$, $\eta^2 = .044$ on the connectedness to school scale. As in the mentee group, there were proportionately more girls ($n = 56$) than boys ($n = 18$) in the academically connected group compared to the proportion of girls ($n = 46$) and boys ($n = 62$) in the disconnected group, $X^2 = 19.51$, $p < .001$, and academically connected controls were less likely to have an absent parent ($M = 5.34$, $SD = 3.12$) than were disconnected controls ($M = 6.69$, $SD = 3.52$), $t = -2.66$, $p < .01$). Means and standard deviations for demographic and grouping variables are presented in Table 2.

## Identifying Mentors with Different Attitudes toward Youth and Comparing Them at Baseline

To understand the role of mentors' attitudes toward youth, we sought to identify mentors who were low and high on the Attitudes Towards Youth scale. To create these groups, we conducted a median split on the variable and identified those mentors with scores greater than or equal to the median (3.43) as having more positive attitudes toward youth ($n = 117$, "positive mentors"), and those with scores lower than the median as having more negative attitudes toward youth ($n = 104$, "negative mentors").

We compared positive and negative mentors on a range of demographic and background characteristics including, age, gender, ethnicity, work and extracurricular involvement, previous mentoring experience, goals for the mentoring relationship, and mentoring strategies (Table 3). Compared to mentors with negative attitudes, those with more positive attitudes were more likely to be female, have had more contact with youth aged 9-14 in the last year, and be involved in high school clubs, but they were less likely to be receiving course credit for their mentoring activities. More positive mentors (30%) than negative mentors (17%) felt that helping their mentee feel good about him/herself was the most important goal of mentoring. Fewer positive mentors (29%) than negative mentors (40%) felt that providing their child with structure was their preferred mentoring strategy. This suggests these two groups of mentors may have used different interaction strategies with their mentees.

### The Role of Mentor and Mentee Characteristics on Measures of Relationship Quality

**Main effects of mentee characteristics on proximal outcomes**. In order to test our hypotheses regarding the role of mentee and mentor characteristics on proximal and distal outcomes from peer mentoring, we first conducted a series of hierarchical linear regression models. The first set examined the extent to which academically disconnected and connected mentees differed on our two proximal measures of relationship quality after 9 months (means for these proximal measures are presented in Table 2). Although the difference in number of hours each type of mentee met was large (10 hours, d = 1.95), it was not statistically significant. Nor were there statistically significant profile differences in the extent to which connected and disconnected mentees reported being emotionally engaged in the match with their mentors.

**Main effects of mentor characteristics on proximal outcomes.** When we included mentor attitudes toward youth in the regression analyses, we found that mentor attitudes toward youth at baseline predicted youths' emotional engagement at the 9-month assessment, $t(192) = 2.42$, $b = .12$ (.05), $p < .05$, such that having a mentor who held more positive attitudes toward youth was associated with more emotional engagement reported by their mentees (see Table 2). There was no effect on match length.

**Interaction between mentor and mentee characteristics on proximal outcomes**. This main effect of mentor's attitudes on mentees' reports of emotional engagement varied by mentee profile, $t(192) = -2.50$, $b = -.20$ (.08), $p < .05$. The plot of this interaction in Figure 3 depicts youths' emotional engagement as a function of mentee profile (1 = connected mentees; 0 = disconnected control group children) and mentor attitudes toward youth (negative mentors as – 1 standard deviation below the mean; positive mentors as + 1 standard deviation above the mean, *M* = 3.43, *SD* = .51). Figure 3 shows that disconnected mentees paired with positive mentors were more emotionally engaged than disconnected mentees paired with negative mentors.

## Comparing Disconnected and Connected Mentees with Controls on Distal Outcomes

**Main effects of mentee and mentor characteristics on distal outcomes.** A series of ANCOVAs was conducted next to test the main effect of profile type on the six distal outcomes. These analyses included all of covariates used in the original study (Herrera et al., 2007; i.e., the baseline value of the outcome measure, youth's age, minority status, gender, number of youth-reported stressful life events in the six months prior to the baseline interview, whether the child qualifies for free or reduced-price lunch, the child's extracurricular activity involvement, and youth's substance use). These revealed one significant difference. Disconnected mentees reported better relationships with their teachers (*M* = 3.87, *SE* = .05, CI = 3.78, 3.97) at the end of the year than did the disconnected children in the control group (*M* = 3.68, *SE* = .05, CI = 3.57, 3.78), *F*(3, 340) = 2.74, *p* < .05. There were no main effects of mentor type.

**Interaction between mentor and mentee characteristics on distal outcomes.** Having found an interaction between mentor and mentee characteristics on one of the two proximal measures of relationship quality, and a main effect of mentee type on teacher relationship quality, we next conducted a series of analyses of covariance to test whether the effect of peer mentoring on the six distal outcomes for the two mentee profiles (disconnected or connected) was moderated by the attitudes held by their mentors, and whether either group of mentees differed from their disconnected and connected counterparts in the control group. Again, each analysis included all of the baseline covariates used in the national evaluation from which these data were drawn. Means and standard errors for distal outcomes are presented in Table 4.

We separated the six distal outcome variables into two groups, subjecting each set to a Benjamini-Hochberg adjusted alpha level to correct for false discovery (Benjamini & Hochberg, 1995). We focused first on the three outcome variables (i.e., truancy, teacher-student relationship quality, and prosocial behavior) that had not been used to create the mentee profiles. We then focused on differences on those outcomes that were used as grouping variables (i.e., overall academic performance, social acceptance, and negative contribution to the classroom). We considered these groups of outcomes separately because the latter variables would all be subjected to a restriction in range due to only half of the distribution for that variable being present in either group. For example, youth identified as being in the connected profile only had social acceptance scores in the upper range of all mentored youth.

Analyses were conducted separately for the disconnected and connected profiles to ensure that each test compared only disconnected or only connected children. Thus, both sets of ANCOVAs (one set for disconnected and one for connected youth) included the three groups of children reflecting the same risk profile. For example, the first test compared disconnected mentees paired with positive mentors, disconnected mentees paired with negative mentors, and disconnected control children.

***Distal outcomes for academically disconnected mentees***. For the disconnected mentees, only one statistically significant main effect was observed among the first set of outcome variables. This effect was on teacher relationship quality $F(2, 185) = 4.20$, $p < .05$, which was significant at the Benjamini-Hochberg adjusted alpha level of .02. Pairwise comparisons revealed that disconnected mentees paired with positive mentors reported significantly better teacher-relationship quality than did disconnected controls (mean difference .26, CI = -.42, -.07, $p < .01$, $d = .36$; $1 - \beta = .68/.56$, one/two-tailed). Although the omnibus tests for truancy differences across groups was not statistically significant, a non-significant trend in the same direction was found in which disconnected mentees paired with positive mentors were truant less often than disconnected controls (mean difference of .38, CI = .82, -.07, $p < .10$, $d = .32$ ;$1 - \beta =$ .65.53, one/two-tailed). There were no differences on the three grouping variables outcomes.

***Distal outcomes for academically connected mentees***. For the connected mentees, none of the omnibus tests for differences in means across the three groups were significant at the Benjamini-Hochberg adjusted alpha levels. Noteworthy, especially given the limited statistical power of the subgroup comparisons, were the pair-wise comparisons of connected mentees with positive mentors to connected comparison group. Academically connected mentees with positive mentors made more negative contributions to the classroom (mean difference .19, CI = .02, .37, $p < .05$, $d = .42$; $1 - \beta = .47$ for two-tailed test) and had higher teacher-rated social acceptance (mean difference .22, CI = .01, .44, $p < .05$, $d = .33$; $1 - \beta = .72$ for two-tailed test).

**Summary.** For both mentored and control group children, we identified two profiles using mixture modeling that we called academically disconnected and connected. We also identified mentors as being relatively positive or negative based on whether they fell above or below the median score for attitudes toward youth in the community; these positive and negative mentors differed across a range of characteristics. Tests of the interaction between mentee and mentor characteristics on outcomes revealed that disconnected mentees who were paired with mentors who held relatively positive attitudes toward youth were more emotionally engaged in the mentoring relationship than disconnected mentees who were paired with high school mentors with relatively negative attitudes toward youth. Further, disconnected mentees paired with positive mentors reported significantly better teacher-relationship quality than did disconnected controls. Though failing to achieve a statistically significant omnibus tests, significant pairwise subgroup comparisons suggested that disconnected mentees paired with positive mentors were truant less often than disconnected controls. Similarly underpowered but informative statistically significant pairwise tests revealed that the connected mentees with negative mentors made more negative contributions to the classroom and reported greater peer acceptance after mentoring than did connected children in the control group.

## Discussion

The primary aim of this study was to examine whether mentors' attitudes toward youth moderated program outcomes, and whether these effects varied on the basis of their mentees' baseline risk status. The study builds on prior research suggesting that mentors' perceptions of their mentees may influence their mentees' experience in the program.

### Types of Children Referred for Mentoring

This study utilized data from a national, longitudinal study of the Big Brothers Big Sisters (BBBS) school-based mentoring program (Herrera et al., 2008). Exploratory analyses revealed that two types of children had been referred to the mentoring program. In analyses conducted separately involving mentees and control youth, two very similar profiles of children's characteristics emerged. One group of mentees was characterized by average academic achievement, low social acceptance at school, and frequent negative contributions to the classroom; and the second group of mentees was characterized by high overall academic achievement and social acceptance at school, and significantly fewer negative contributions to the classroom. Given that these teacher-rated characteristics reflected degrees of engagement and success in relationships at school, we termed these two groups academically disconnected and academically connected children.

The only difference in mentoring program impacts between these groups of mentees was on end of year teacher relationship quality, with only the disconnected mentees showing improvements compared to the control group. Further analyses revealed that it was only the academically disconnected mentees with positive mentors who had higher teacher relationship quality ratings than the similarly disconnected control group. A similar non-significant trend appeared with lower truancy among disconnected mentees with positive mentors than the control group. However, these comparisons were underpowered statistically.

## The Importance of Mentors Working From a Positive Youth Development Perspective

Taken together, these findings are consistent with the positive youth development perspective which suggests adults who hold a view of youth that emphasizes their strengths make a bigger difference in the lives of children (e.g., Benson, 2003; Lerner et al., 2006). The findings suggest that teen mentors who hold more positive attitudes toward the kids in their community may have a more positive influence on younger mentees, and may be especially helpful to mentees whose academic performance, relationships, and behaviors render them disconnected.

One reason why the disconnected mentees matched with positive mentors may have reported more emotionally engaged mentoring relationships than did those youth matched with negative mentors might be that the positive mentors were more likely to view their role as helping their mentees feel good about themselves and were less likely to view their role as a mentor in terms of providing structure. These more positively oriented mentors might approach their relationships in ways that foster higher levels of trust, empathy, and mutuality, empathy, which Rhodes (2005) describes as key proximal or enabling outcomes in successful mentoring relationships. The positive experience such mentors elicit in their mentees, in turn, also may explain how peer mentoring might make mentees more receptive to other caring providers, most notably to the mentees' teachers, suggesting beneficial and potentially far-reaching shifts in mentees' approaches to pivotal relationships.

This also suggests that, on the whole, peer mentoring guided by a strengths-promotion rather than risk reduction perspective yield larger positive effects (Lerner, et al., 2006). As in other professional relationships, such as psychotherapy (Wampold, 2001) and teaching (Rosenthal & Jacobson, 1968), in which the caregiver's expectations and resulting nonverbal behaviors are a primary tool for growth and development, in mentoring programs, where the interactions and conversations are largely private and determined by the mentors and mentees themselves, the perspectives and attitudes that the mentors bring to their mentoring relationships may be particularly salient predictors of program outcomes.

## The Power of Social Expectations and the Problem of Iatrogenic Effects

These findings also are consistent with a long history of experimental findings on self-fulfilling prophesies and previous research on the role of teacher expectations on student outcomes. Both suggest that perceivers' differential expectations can result in different behaviors toward their target and, ultimately, different outcomes from these relationships. The findings are especially relevant for their implications for working with disconnected youth who may already experience the detrimental effects of parents' and teachers' negative expectancies.

Sadly, the converse may also be true. Matching more academically connected children with teenagers mentors who hold negative attitudes towards children may yield iatrogenic results, perhaps even cultivating risk trajectories that might otherwise not have emerged. It must be noted, however, that this study's sample size compromised the statistical power we had to detect the many subgroup differences. Yet, there was some evidence in pairwise subgroup comparisons of a negative effect of mentoring (resulting in poorer classroom behavior, more attention from peers) for academically connected mentees paired with negative mentors.

Although it is not clear why this happened, we found that mentors with negative attitudes were less concerned with supporting their mentees positive self-perceptions ("making them feel good") and slightly more likely to view their role as to provide structure (e.g., be a disciplinarian). Therefore, it’s quite possible that the negative mentors anticipated more misbehavior by their mentees, and in response inadvertently created a Pygmalion in the program: exacting a self-fulfilling prophecy in which they helped to  create the child whom they expected to encounter. To better test these hypothesized links between mentors' attitudes, mentors' behaviors, and mentees' experiences and subsequent behavior will require future studies to examine how mentors’ pre-existing beliefs may be related to the ways in which mentors structure their conversations and time with mentees and closer attention to the mentees' reactions to their mentors' behaviors.  However, both for better and for worse, it seems mentors’ pre-match beliefs appear to shape their mentees’ future relationships and behaviors in expectancy-consistent ways thereby either curbing or cultivating future problems in school.

The potential for peer mentors to negatively affect their mentees also adds to a long line of studies of peer deviancy effects and deviancy training (Dodge, Dishion, & Lansford, 2006; McCord, 2003; Powers & Witmer, 1951). This line of research reveals that iatrogenic effects resulting from deviancy training are most likely to occur in interventions in which treatment youth are aggregated with other peers, when the participating youth are given little direction, and when a significant number of participating youth hold more unconventional, socially antagonistic perspectives (Dodge et al., 2006). This line of research would lead one to expect a greater risk of deviancy training effects from experiences with negative mentors, in unstructured mentoring and, in a peer group context similar to the program format in this study.

## Limitations

Although this study has several strengths, including longitudinal data from multiple informants and a large, national sample, there also are limitations that should be noted. In this study, mentors with different views of youth were not randomly assigned to different types of mentees. Thus, there could be unmeasured characteristics of children or mentors (or their combination) that were considered by agencies when creating these matches that could be responsible for the associations we found in this study. Although all of the characteristics we used to classify mentees and categorize mentors were assessed prior to forming the mentoring matches, all quasi-experimental comparisons such as ours are subject to unknown rival explanations, such as selection effects due to the staffs' matching strategy.

Statistical power also was hampered by the somewhat small subgroup sample sizes. While not uncommon in the research literature on youth mentoring (see DuBois et al., 2002), the subgroups we compared were fairly small (some $n < 50$) when we examined effects for different profiles of mentees who had different types of mentors. Not all of those effects which were reported to be statistically significant were adequately powered, which suggests both that these differences may be due to chance but also that other true differences may not have been detected. However, we erred on reporting these tests nevertheless because the consequence of not heeding the possibility of negative effects could be significant for children in such programs. But future research will be necessary to confirm many of the subgroup comparisons attempted here.

Likewise, all data were drawn from youth in Big Brothers Big Sisters school-based mentoring programs, limiting our ability to generalize our findings to other mentoring programs which may differ in structure. Indeed, since youth in school-based mentoring programs tend to spend less time with their mentors than do youth in community-based programs, it is possible that disconnected youth in more intensive community-based mentoring programs may derive even more benefits from positively-disposed mentors. Future studies using more sensitive measures and including qualitative research components also will be needed to further explore the role that expectations may play in mediating the association between risk status and youth outcomes.  Additionally, other program or school characteristics may explain these outcomes.

## Recommendations for Practice

Despite these limitations, the findings provide several useful guides for future research as well as for the recruiting, training and matching of teen mentors in cross-age peer mentoring programs. Given some of the limitations described above, as well as the quasi-experimental and exploratory nature of the analyses, these implications should be viewed as starting points for improving program practices but should not be considered definitive (Rhodes & Lowe, 2008).

**Recruit teen mentors with a highly positive view of youth**. When recruiting teen mentors, it would be wise to survey applicants' attitudes toward youth along with other useful predictors (such as the Social Interest Scale, see Karcher & Lindwall, 2003), and select those applicants who report the most positive attitudes toward the children in their community. In this study, the cutoff between those who were higher and lower on the scale was 3.4. Future research should refine this benchmark. Until then, program staff might aim to recruit only mentors whose scores fall above this cutoff.

Other variables associated with having more positive attitudes toward youth also might be helpful to target in recruitment. For example, those mentors with more positive attitudes had more contact with children in the prior year, were more engaged in school clubs, less likely to be mentoring for credit, and more often female. Taken together, these findings suggest that youth with prior experience working with children (e.g., through babysitting, younger siblings) might hold more realistic expectations about their young mentees. Interviews with applicants also might reveal characteristics associated with more positive attitudes such as being more likely to view their role as a mentor as helping the child feel good about him/herself, listening, and forming a friendship, and less likely to expect to need to provide the child with structure.

**Opportunities for training mentors.** Finally, Lerner, Brittan, and Fay (2007) suggest that although mentoring programs provide unique opportunities to facilitate mentees' strengths and development, the mentor's approach matters. These findings should serve as a reminder, especially to staff in peer mentoring programs, of what Rosenthal and Jacobson (1968) concluded—namely, that changing caregivers' beliefs about the children in their charge can engender behaviors that create a self-fulfilling prophecy for better or worse. In their study, *Pygmalion in the classroom,* they found that, in comparison with teachers who held unfavorable beliefs about students' achievement, teachers who held favorable beliefs delivered more instruction, provided feedback that was clearer and more contingent on students' performance, and offered more opportunities for students to practice their skills and convey their knowledge (Harris & Rosenthal, 1985). It may therefore be reasonable to expect that by teaching mentors, both through pre-match and in-service training, to hold more positive views of youth and to keep their expectations in check, programs similarly may effect the kinds of behaviors among mentors that are most likely to result in stronger relationships and better outcomes.

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Table 1.

*Demographic Characteristics of Mentored and Control Children (n = 387)*

| | Mentees | | Control Group | |
|---|---|---|---|---|
| Demographic characteristics | Number | Percentage | Number | Percentage |
| Gender | | | | |
| Male | 92 | 42.9% | 80 | 44% |
| Female | 113 | 55.1% | 102 | 56% |
| Grade in School | | | | |
| 4th | 98 | 47.8% | 75 | 41.2% |
| 5th | 60 | 29.3% | 48 | 26.4% |
| 6th | 35 | 17.1% | 44 | 24.2% |
| 7th | 12 | 5.9% | 15 | 8.2% |
| Race/Ethnicity | | | | |
| White | 115 | 56.1% | 107 | 58.8% |
| Hispanic/Latino | 17 | 8.3% | 9 | 4.9% |
| Black/African American | 16 | 7.8% | 11 | 6.0% |
| Native American | 16 | 7.8% | 24 | 13.2% |
| Asian/Pacific Islander | 4 | 2.0% | 1 | .5% |
| Multiracial | 34 | 16.6% | 26 | 14.3% |
| Other | 8 | 3.9% | 5 | 2.7% |

Table 2.

*Means (Standard Deviations) for Demographic and Grouping Variables, and Proximal Outcomes for Academically Disconnected and Connected) Mentored and Control Children*

| | Disconnected mentees | Connected mentees | Disconnected Controls | Connected Controls | Profile Differences |
|---|---|---|---|---|---|
| Outcome | $n$ = 118 | $n$ = 87 | $n$ = 108 | $n$ = 74 | $F$ (3, 387) = or $X^2$ = |
| Sex | Girls = 56 (47%)<br>Boys = 62 (53%) | Girls = 57 (66%)<br>Boys = 30 (34%) | Girls = 46 (43%)<br>Boys = 62 (57%) | Girls = 56 (76%)<br>Boys = 18 (24%) | 26.11*** |
| Age | 10.98 (1.19)$^{a}$ | 10.41 (.86)$^{b}$ | 10.85 (1.44)$^{ab}$ | 10.76 (1.08)$^{ab}$ | 4.01** |
| Grade | 4.98 (1.00)$^{a}$ | 4.57 (.76)$^{b}$ | 5.02 (.99)$^{ab}$ | 4.96 (1.01)$^{a}$ | 4.38** |
| Child Characteristics (Pre-Intervention) | | | | | |
| Overall Academic Performance | 2.26 (.86)$^{a}$ | 2.98 (1.18)$^{b}$ | 2.22 (1.00)$^{a}$ | 2.85 (1.13)$^{b}$ | 13.643*** |
| Social Acceptance | 2.50 (.66)$^{a}$ | 3.11 (.51)$^{b}$ | 2.60 (.65)$^{a}$ | 2.67 (.64)$^{a}$ | 17.78*** |
| Negative Contribution to the Classroom | 2.09 (.58)$^{a}$ | 1.10 (.11)$^{b}$ | 2.16 (.54)$^{a}$ | 1.10 (.10)$^{b}$ | 176.38*** |
| Proximal Outcomes | | | | | |
| Match Length (P) | 150.90 (4.69) | 160.85 (5.53) | n/a | n/a | 1.74 |
| Emotional Engagement (P) | 3.55 (.06) | 3.60 (.07) | n/a | n/a | .41 |

$^{a,b}$Means with different superscripts differ significantly by profile.

*Note.* Demographic and grouping variables were measured at the baseline assessment. For proximal outcomes, means (standard errors) are adjusted for the following baseline covariates: child's age, minority status, gender, number of child-reported stressful life events in the six months prior to the baseline interview, whether the child qualifies for free or reduced-price lunch, the child's extracurricular activity involvement, and child's substance use.

P = Proximal outcome of mentoring relationship quality at the 9-month assessment.

$^{**}p < .01$; $^{***}p < .001$.

Table 3.
*Descriptive Statistics for Positive Mentors and Negative Mentors*

| | Positive Mentors | Negative Mentors | Mentor Differences |
|---|---|---|---|
| Mentor characteristics | *n* = 117 | *n* = 104 | *F* (1, 220) = or $X^2$ = |
| Mentor attitudes toward youth | 3.79 (.28) | 2.97 (.32) | 420.53*** |
| Mentor age | 16.27 (.91) | 16.19 (1.02) | .40 |
| Grade in H.S. | 10.96 (.76) | 10.86 (.86) | .87 |
| Gender | M = 16; F = 101 | M = 25; F = 79 | 3.91* |
| Mentor is white | No = 18; Yes = 99 | No = 22; Yes = 82 | 1.24 |
| Mentor currently has a paid job | No = 74; Yes = 43 | No = 67; Yes = 37 | .03 |
| # of hours/week mentor typically works | 5.63 (8.56) | 5.09 (8.24) | .22 |
| Mentor knows other volunteers | No = 11; Yes = 105 | No = 5; Yes = 99 | 1.78 |
| Currently volunteers at other organizations | No = 79; Yes = 38 | No = 59; Yes = 44 | 2.46 |
| Contact with youth aged 9 – 14 in last year | 3.51 (.61) | 3.32 (.71) | 4.30* |
| Previous mentor experience in formal program | No = 95; Yes = 18 | No = 85; Yes = 19 | .21 |
| Previous mentor experience in informal program | No = 42; Yes = 71 | No = 30; Yes = 74 | 1.69 |
| Involved in H.S. sports | No = 62; Yes = 55 | No = 58; Yes = 46 | .17 |
| Involved in H.S. music | No = 88; Yes = 29 | No = 68; Yes = 36 | 2.56 |
| Involved in H.S. clubs | No = 21; Yes = 96 | No = 33; Yes = 71 | 5.66* |
| Receiving school credit for volunteering | No = 79; Yes = 35 | No = 58; Yes = 44 | $3.59^{+}$ |
| Helping make academic improvements is most important goal | No = 99; Yes = 8 | No = 88; Yes = 8 | .05 |
| Helping improve school behavior is most important goal | No = 107; Yes = 0 | No 94; Yes = 2 | 2.25 |
| Being a friend is most important goal | No = 49; Yes = 58 | No = 41; Yes = 55 | .20 |
| Helping improve relationships is most important goal | No = 106; Yes = 1 | No = 93; Yes = 3 | 1.26 |
| Helping feel good about him/herself is most important goal | No = 75; Yes = 32 | No = 80; Yes = 16 | 4.91* |
| Mentor strategy is to give child feedback | No = 75; Yes = 42 | No = 60; Yes = 44 | .95 |
| Mentor strategy is listening and being friend to child | No = 6; Yes = 111 | No = 9; Yes = 95 | 1.08 |
| Mentor strategy is providing child with structure | No = 83; Yes = 34 | No = 62; Yes = 42 | 3.13+ |
| Mentor strategy is sharing experiences | No = 50; Yes = 67 | No = 46; Yes = 58 | .05 |

| | | | |
|---|---|---|---|
| Mentor strategy is to help child with schoolwork | No = 47; Yes = 70 | No = 41; Yes = 63 | .01 |

***$p < .001$, *$p < .05$, + $p < .10$

Table 4.

*Means (Standard Errors) for Distal Outcomes for Academically Disconnected and Connected Children Paired with a Positive Mentor, a Negative Mentor, or No Mentor (Control) at the 9-Month Assessment*

|  | Disconnected mentees with Positive Mentor | Disconnected mentees with Negative Mentor | Disconnected Controls | Connected mentees with Positive Mentor | Connected mentees with Negative Mentor | Connected Controls |
|---|---|---|---|---|---|---|
| Outcome | *n* = 60 | *n* = 52 | *n* = 108 | *n* = 40 | *n* = 45 | *n* = 74 |
| Proximal Outcomes |  |  |  |  |  |  |
| Match Length | 159.73 (6.47) | 147.66 (6.96) | n/a | 157.93 (7.20) | 159.92 (6.77) | n/a |
| Emotional Engagement | 3.69 (.08) | 3.41 (.08) | n/a | 3.52 (.09) | 3.68 (.08) | n/a |
| Distal Outcomes |  |  |  |  |  |  |
| # Times Absent without Excuse (Truancy) | .22 (.18) | .31 (.19) | .60 (.14) | .23 (.13) | .19 (.13) | .25 (.10) |
| Teacher-Relationship Quality | 3.68 (.07) | 3.59 (.08) | 3.43 (.05) | 4.11 (.07) | 4.08 (.07) | 4.12 (.06) |
| Prosocial Behavior | 2.97 (.06) | 2.83 (.06) | 2.87 (.04) | 3.27 (.07) | 3.28 (.07) | 3.34 (.05) |
| Overall Academic Performance | 2.37 (.09) | 2.34 (.10) | 2.26 (.07) | 3.10 (.12) | 3.18 (.11) | 2.92 (.09) |
| Social Acceptance | 2.63 (.08) | 2.57 (.09) | 2.49 (.06) | 2.96 (.08) | 3.03 (.08) | 2.80 (.06) |
| Negative Contribution to the Classroom | 2.14 (.07) | 2.13 (.08) | 2.13 (.06) | 1.23 (.07) | 1.45 (.07) | 1.25 (.05) |

*Note.* Means are adjusted for the following baseline covariates: outcome of interest, child's age, minority status, gender, number of child-reported stressful life events in the six months prior to the baseline interview, whether the child qualifies for free or reduced-price lunch, the child's extracurricular activity involvement, and child's substance use.

Figure Captions

*Figure 1.* Two-Profile Mixture Modeling Solution for Patterns of Baseline Adjustment for Mentees Paired with High School Mentors

*Figure 2.* Two-Profile Mixture Modeling Solution for Patterns of Baseline Adjustment for Control Children

*Figure 3.* Mentees' Emotional Engagement as a Function of Mentee Profile and Mentors' Attitudes toward Youth.

*Figure 1.*

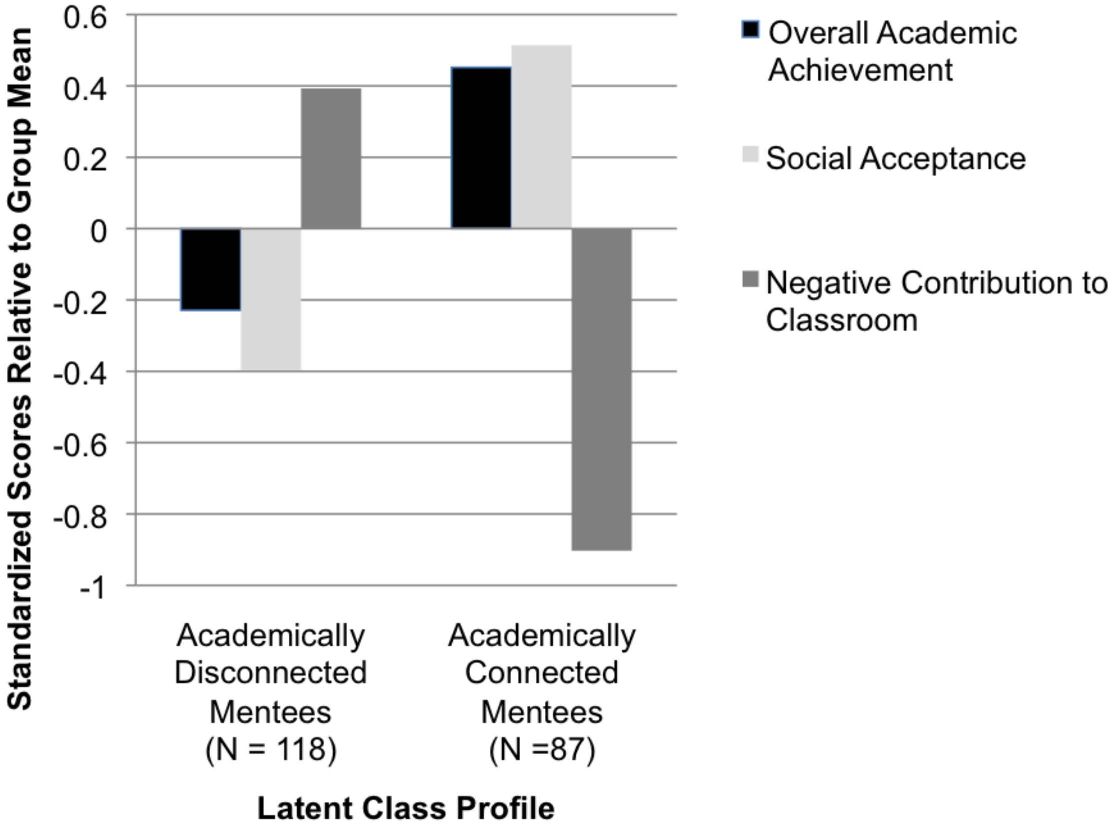
Standardized Scores Relative to Group Mean
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
Academically Disconnected Mentees (N = 118)
Academically Connected Mentees (N =87)
Latent Class Profile
Overall Academic Achievement
Social Acceptance
Negative Contribution to Classroom

*Figure 2.*

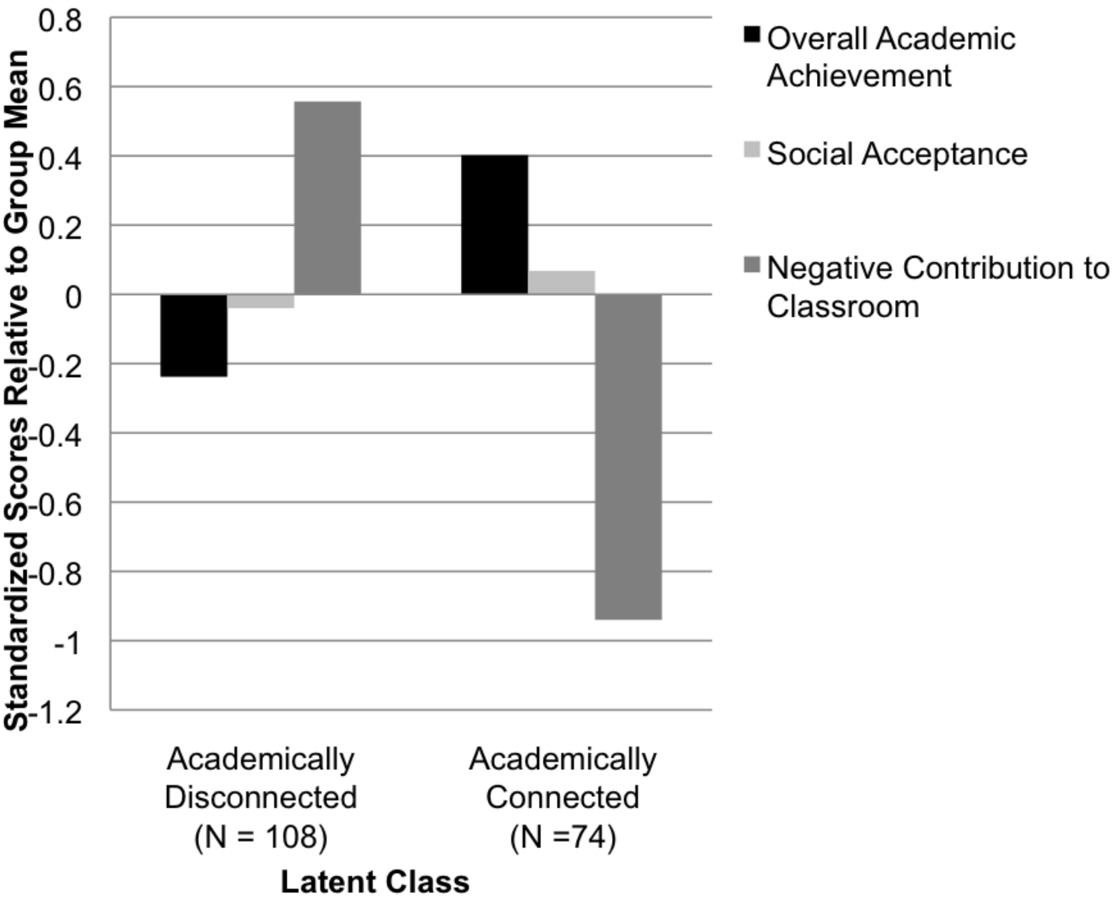
Standardized Scores Relative to Group Mean
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
Academically Disconnected (N = 108)
Academically Connected (N =74)
Latent Class
Overall Academic Achievement
Social Acceptance
Negative Contribution to Classroom

*Figure 3.*

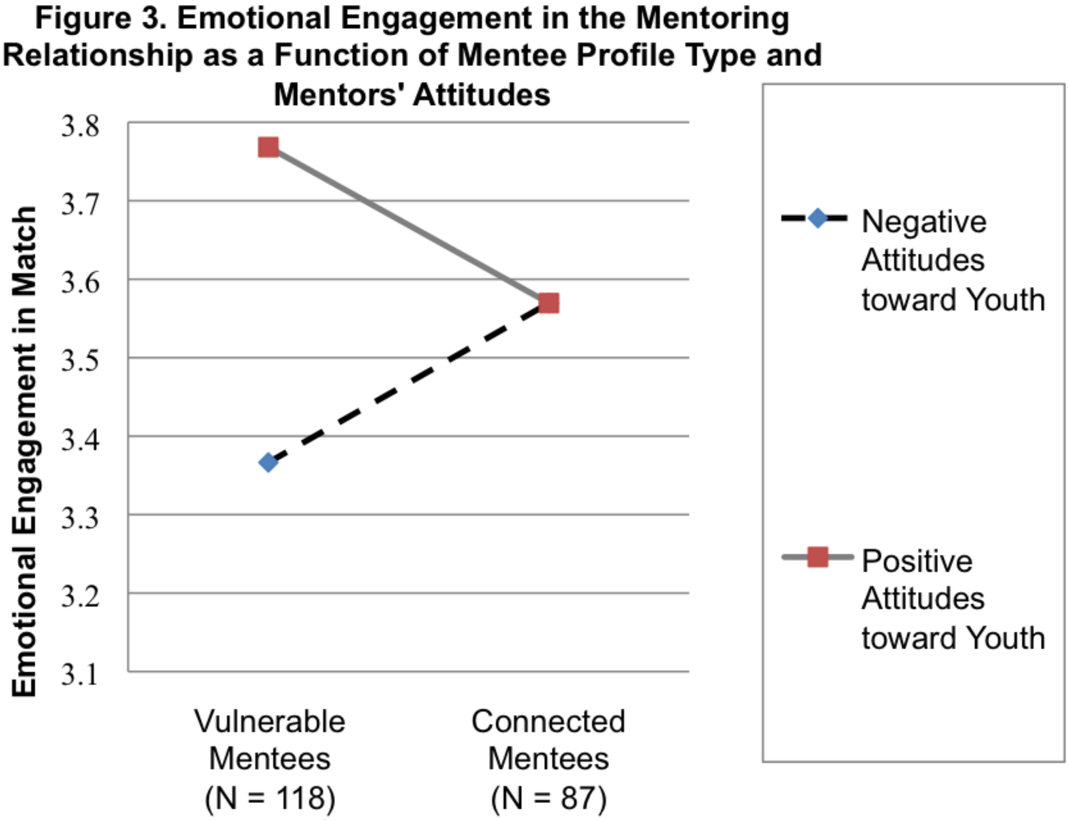

**Figure 3. Emotional Engagement in the Mentoring Relationship as a Function of Mentee Profile Type and Mentors' Attitudes**

*Figure 3.* Illustration of interaction between teen mentors' views of youth in general (range 1-5, split at 3.43) and their mentees' profile status (either vulnerable or connected) on the mentees' reports of emotional engagement (range 1-4).

Running Head: MENTORING AND YOUTH RELATIONAL PROFILES

(in press) Developmental Psychology

# The Impact of School-based Mentoring on Youth
# With Different Relational Profiles

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&

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# Abstract

Associations between youth's relationship profiles and mentoring outcomes were explored in the context of a national, randomized study of 1,139 youth (54% female) in geographically diverse Big Brothers Big Sisters of America school-based mentoring programs. The sample included youth in grades four through nine from diverse racial and ethnic backgrounds, the majority of whom were receiving free or reduced-price lunch. Using Latent Profile Analysis, a person-oriented approach, three distinct relational profiles were identified. Mentoring was found to have differential effects depending on youth's pre-intervention approach to relationships. In particular, youth who, at baseline, had satisfactory, but not particularly strong, relationships benefited more from mentoring than youth with profiles characterized by either strongly positive or negative relationships. Implications for research and practice are discussed.

Keywords: youth mentoring, parent relationships, teacher relationships, latent profile analysis

# The Impact of School-based Mentoring on Youth With Different Relational Profiles

Youth mentoring programs (e.g., Big Brothers Big Sisters) pair youth with volunteers who are trained to provide support and guidance. Such programs have experienced tremendous growth in the past two decades. Millions of volunteer mentors are involved in youth's lives, and the numbers are continuing to rise (MENTOR/National Mentoring Partnership, 2006). Anecdotal reports of mentors' protective qualities are corroborated by a growing body of research, providing support for the positive contributions non-parental adults can make in the lives of youth (Rhodes & Lowe, 2008). At the same time, research on the effectiveness of mentoring programs has revealed considerable room for improvement in both the strength and consistency of program impacts (DuBois, Holloway, Valentine, & Cooper, 2002; Eby, Allen, Evans, Ng, & DuBois, 2008). In their meta-analysis of 55 evaluations of youth mentoring programs, DuBois, Holloway et al., (2002) found evidence of only small benefits, on average, for participating youth on measures of emotional, behavioral, and educational functioning. Importantly, however, effect-size estimates increased systematically in conjunction with individual, match, and program-related factors (DuBois, Holloway, et al., 2002). Several investigations also have highlighted a range factors associated with better outcomes, including match length (Grossman & Rhodes, 2002), consistency (DuBois, Neville, Parra, & Pugh-Lilly, 2002), and closeness (Spencer, 2006; Thomson & Zand, 2010).

Although empirical support for youth mentoring interventions remains uneven, a handful of rigorous evaluations and studies have provided an initial base from which to launch and improve new mentoring initiatives (see Rhodes & DuBois, 2006). Within this context, school-based mentoring (SBM), in which mentors and mentees meet on school grounds, generally during school hours, has been the fastest growing approach, accounting for nearly half of all youth mentoring programs (DuBois & Karcher, 2005). In SBM programs, mentors and mentees engage in activities together, including talking, playing games, and academic-related tasks such as homework or reading. SBM's strong appeal stems from its ability to serve youth who may not be reached by other forms of mentoring and its potential to connect a broad array of community members with youth's daily academic and social experiences in the school setting, potentially improving youth's experience in and outlook on school. Participation in SBM has been associated with positive outcomes, including improvements in academic, behavioral, and psychosocial adjustment (Cavell & Hughes, 2000; Karcher, 2008; Karcher, Davis & Powell, 2002; Matzenbacher, 1999; Portwood & Ayers, 2005). Although promising, these findings are mostly based on non- or quasi-experimental evidence. Findings from two recent random assignment impact evaluations of SBM showed few statistically significant impacts on academic, psychosocial, or behavioral outcomes (Bernstein, Rappaport, Olsho, Hunt, & Levin, 2009; Herrera, Grossman, Kauh, Feldman, & McMaken, 2007). Secondary analyses of these data, however, have hinted at variability in effects among different subgroups of youth (Bernstein et al., 2009; Herrera, Grossman, Kauh, Feldman, & McMaken, 2007; Herrera, Grossman, Kauh, & McMaken, in press).

Such findings underscore the importance of identifying factors that account for variation in the effectiveness of SBM. The present study draws on secondary data analyses from the national evaluation of Big Brothers Big Sisters SBM programs (Herrera et al., 2007) to examine whether the quality of youth's pre-intervention relationships with their parents, teachers and peers was associated with the benefits they later derived from SBM.

### *Background*

Not all youth are equally suited for mentoring. Although some advocates might argue that every youth would benefit from the compassionate attention of a volunteer adult, most concede that mentoring is neither a substitute for professional treatment for youth with serious emotional, behavioral or academic problems, nor a necessary inoculation for all youth (Rhodes & DuBois, 2006). In addition to youth's baseline functioning, their relationship histories and access to additional sources of support are likely to affect the degree to which they can benefit from mentoring. For example, youth who enter mentoring programs with strong connections to their parents, teachers, and coaches may have sufficient adult support, and hence less of a need for volunteer services (Grossman & Johnson, 1999). Additionally, youth who have had unsatisfying relationships may be less inclined to trust the overtures of caring adults (Kobak & Sceery, 1988; Romero-Canyas, Downey, Berenson, Ayduk, & Kang, 2010). LaRose, Bernier, & Soucy (2005) for example, found that young adults with insecure parental attachments felt relatively less security in their relationships with mentors. Furthermore, youth with deeply rooted relational difficulties, such as aggressive and antisocial behaviors, which tend to be more resistant to change (e.g., Connor, 2004; Vaughn & Howard, 2004), may need more comprehensive interventions than volunteer mentors can provide. In fact, research demonstrates that mentoring programs tend to be less effective for youth who demonstrate moderate to severe individual risk factors, such as academic or behavioral difficulties (DuBois, Holloway, et al., 2002; Jolliffe & Farrington, 2007).

As suggested above, such variability in benefits may stem, in part, from youth's relational histories. Because mentoring is essentially a relationship-based intervention, it can ignite vulnerabilities and elicit behavioral patterns that were established in earlier bonds. In particular, children are thought to draw on their early experiences with caregivers and others to develop experience-based expectations, or working models. These models, in turn, influence behavior in interpersonal relationships throughout and beyond childhood (Ainsworth, 1989; Bowlby, 1988). There is considerable evidence for continuity in relationship styles across individuals' various relationships. Specifically, parental attachment has been shown to predict the quality of children's subsequent relationships with teachers, outside caregivers, and peers (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Berlin & Cassidy, 1999; Carlson, Sroufe, & Egeland, 2004; Lynch & Cicchetti, 1992; Rydell, Bohlin, & Thorell, 2005).

There is thus good reason to hypothesize that youth's relationship experiences might affect their approaches to mentoring. Some youth entering mentoring programs have had a history of deeply supportive relationships, while others have experienced relationships characterized by negativity or even abuse or neglect. These differences are likely to have implications for mentoring relationship quality, length, and outcomes. Grossman & Rhodes (2002), for example, found that youth who had sustained emotional, sexual, or physical abuse had less enduring volunteer mentor relationships. Such youth may hold negative relational expectations and biases, leading them to interpret ambiguous gestures (e.g., cancelled or late appointments) more negatively (Downey, Irwin, Ramsay, & Ayduk, 2004; Downey, Lebolt, Rincón, & Freitas, 1998) and respond less positively to mentors' overtures of support (Rhodes, Grossman, & Resch, 2002). These more negative reactions, in turn, may reduce the mentors' enthusiasm and persistence, undermining both the quality and longevity of the mentoring relationship. By contrast, youth with more positive relationship histories are less inclined to perceive ambiguously intentioned negative behavior in others and better equipped to respond to mentors (Romero-Canyas, Downey, Berenson, Ayduk, & Kang, 2010). Depending on their extant social resources, however, the relationships of such youth may take different courses. Youth with an abundance of adult and peer support may fail to invest fully in the relationship, leaving their mentors feeling unnecessary, while youth in need of guidance and support may engage with their mentors in ways that enrich the quality and longevity of the match.

Youth's proclivity toward forming connections to nonparent adults may also vary as a function of developmental status. In particular, relative to older adolescents, younger adolescents have reported better friendships and more disclosure with adults than older adolescents (Thomson & Zand, 2010) and tend to have more enduring ties with mentors (Grossman & Rhodes, 2002). It may be the case that older adolescents' normative desires for autonomy and independence result in less compliance and emotional accessibility with mentors (Allen & Land, 1999). Similarly, peer and romantic relationships may compete increasingly for adolescents' attention and commitment (Seiffge-Krenke, Shulman, &

Klessinger, 2001), rendering their mentoring relationships less intensive. These developmental differences may, in turn, moderate the relationship processes described above.

### *Current Study*

In this study, we drew on the national evaluation of Big Brothers Big Sisters (BBBS) (Herrera et al., 2007) to explore the possibility that the quality of youth's pre-intervention relationships would be associated with youth's proclivity to forge and benefit from volunteer mentoring relationships. Taking developmental status into account, we sought to determine whether weaker effects would be observed for youth who, at baseline, were less successful in their relationships with parents, teachers, and peers. Likewise, we examined whether effects were less pronounced among youth who, at baseline, already had an abundance of such ties. Specifically, the analyses were designed to test: (1) whether youth could be grouped in meaningful ways as a function of their baseline relationships with parents, teachers, and peers; and, if so, (2) whether the baseline relational profiles of such youth moderated the effects of mentoring on youth outcomes, as well as whether they were associated match duration and relationship quality.

## Method

### *Participants*

Youth in this random assignment impact evaluation were recruited from ten BBBS agencies across the country (serving a total of 71 participating schools), all of which had been operating SBM programs for at least four years, served at least 150 youth, recruited at least two different types of volunteers (e.g., high school students and professionals), and had strong leadership in place (Herrera et al., 2007). All youth who met the following criteria were invited to participate in the study: 1) were in fourth though ninth grades at the start of the study; 2) had parental consent to participate; and 3) had not been referred because of a crisis (e.g., referred by Child Protective Services). Of the total 1,139 youth participating in the study, 54% were female (see Table 1). Thirty-seven percent reported as White, 23% as Hispanic/Latino, 18% as Black/African American, 6% as Native American, 1% as Asian/Pacific Islander, 13% as mixed race, and 3% as Other. Although data were not collected on language spoken in the home, ten percent were identified by teachers as having limited proficiency in English (LEP). Sixty percent of participants were in elementary school (fourth or fifth grade), 34% were in middle school (sixth through eighth grade), and 6% were in ninth grade. Sixty-nine percent of youth were receiving free or reduced-price lunch, and 39% lived in a single-parent home. Based on teacher reports, 51% of youth were performing below grade level and/or needed improvement in their overall academic performance.

Of the 554 mentors who completed baseline surveys, nearly half (48%) were high school students, an additional 18% were college students, and the remaining volunteers were non-student adults. Mentors were recruited by BBBS programs from businesses and schools. Seventy-two percent were female, and 77% were White. Seventy-one percent of mentors reported receiving training from BBBS, typically covering program rules, match expectations, and how to build a strong relationship with their mentees (Herrera et al., 2007).

### *Procedure and Intervention*

Youth were recruited to participate in the study through BBBS agencies and participating schools. Youth participants completed baseline surveys at their school, administered by on-site researchers in small group settings. All of the 1,139 youth participants completed baseline surveys. Teachers were also given surveys to complete individually. For the majority of youth in middle and high school settings, youth's science, social studies, English as a Second Language (ESL), or homeroom teacher completed the survey. Teachers of 1,009 youth (of the 1,139) completed baseline surveys.

After youth completed the baseline survey, they were randomly assigned to the treatment group to be assigned to a mentor (*n* = 565) or the control group to be placed on a waiting list (*n* = 574). Follow-up surveys were administered at two subsequent time points: the spring of the first school year (1,067 youth surveys and 959 teacher surveys were completed) and fall of the second school year (968 youth surveys and 920 teacher surveys were completed). A survey firm administered follow-up surveys at youth's schools or by phone if youth had moved or were absent from school. Surveys were available in both Spanish and English.

Although mentors committed to meeting with youth for one school year, matches generally began after the start of the school year to allow for volunteer recruitment, screening, and training as well as school scheduling, and some matches terminated prematurely during the first year. In fact, at the time of the first follow-up survey, only sixty-four percent of youth in the treatment group were still meeting with the mentor with whom they were originally matched. As a result, youth had received an average of 4.9 months of mentoring by the time of the first follow-up in the spring of the first school year, meeting an average of 3.1 times per month. By the second follow-up survey (during the fall of the second school year), 48% of youth were no longer meeting with a mentor, in many cases because youth had transferred to a new school. Of those youth who were still matched, 41% were meeting with the same mentor they had met with during the previous year, and 11% were meeting with a new mentor. Intent-to-treat analyses were conducted in order to maintain randomization, regardless of whether youth were still meeting with their mentors at the time of the follow-up assessments (Herrera et al., 2007).

### *Measures*

The study's surveys included questions about youth demographic characteristics, measures of parent, teacher, and peer relationship quality, mentoring relationship quality, relationship duration, and youth outcomes. Consistent with the original evaluation (Herrera et al., 2007), outcome measures fell into three broad categories: school-related performance and attitudes; problem behaviors; and social and personal well-being. Previous studies of school-based mentoring have revealed relatively stronger effects on school-related outcomes than on non-school related outcomes (Bernstein et al., 2009; Herrera et al., 2007). Thus, the majority of the outcomes included in this study were school-related. Moreover, whereas previous reports with these data have treated changes in parent, teacher, and peer relationships over time as dependent variables (Herrera et al., 2007; Herrera et al., in press), based on our hypothesis that relationship history may influence the degree to which youth benefit from mentoring, baseline measures of these variables were instead used to create youth relational profiles. In recognition of the significant role mentor relationship quality and match duration play as intermediate outcomes in mentoring (e.g. DuBois, Holloway, et al., 2002; Grossman & Rhodes, 2002; Rhodes & DuBois, 2008), these variables were also included as dependent variables in the current study. Covariates were included based on patterns of significant group differences between profiles. We did not include data from the second school year because nearly half of the matches (48%) terminated at the end of the first school year. Therefore, baseline (T1) and first follow-up (T2) data were used in the current analyses. Zero-order correlations for all variables included in the analyses are presented in Table 2.

*Baseline Relationship Quality (T1 only)*:

*Parent Relationship Quality* was assessed using a sixteen-item youth-reported scale combining the Parent Trust subscale and the Parent Communication subscale of the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987). The IPPA has been used with youth between the ages of 12-20 years old and has demonstrated good psychometric properties, including concurrent validity, reliability, and internal consistency (Armsden & Greenberg, 1987). Respondents indicated the level of support they felt in their relationship with their parent or guardian (e.g., “My parents accept me as I am,” “My parents trust my judgment”). Responses were coded on a four-point scale, ranging from 1 = “hardly ever” to 4 = “pretty often” and the mean was calculated to form a parent attachment score ($\alpha_1 = .89$). A higher score indicates a more positive parent-child relationship.

*Teacher-Student Relationship Quality* was measured using an 11-item youth-reported scale adapted from a teacher-student relationship scale (Eccles et al., 1993) and a teacher connectedness scale (Karcher, 2003). The scales were combined based on the fact that they measured similar constructs and, when combined, retained relatively high reliability. The scale includes items such as “I get along well with my teachers this year” and “I care what my teachers think of me.” The items were scored on a four-point likert scale, ranging from 1 = “not at all true” to 4 = “very true” and a mean score was calculated, with a higher score indicating a more positive teacher-student relationship ($\alpha_1$ = .82).

*Peer Acceptance* was measured using a six-item youth-reported subscale of the Self-Perception Profile for Children (SPPC) (Harter, 1985) containing statements assessing how accepted youth feel by their peers (e.g., “I find it hard to make friends,” “I am popular with others my age”). The SPPC has demonstrated reliability, validity, and stability among cross-cultural samples of youth in elementary and middle school (Schumann, Striegel-Moore, McMahon, Waclawiw, Morrison, & Schrieber, 1999), although some evidence suggests it may be less reliable among African-American girls (Winters, Myers, & Proud, 2002). The original version of the instrument was adapted by using a four-point likert scale ranging from 1 = “not at all true” to 4 = “very true.” Mean scores were calculated, with a higher score indicating a greater level of peer acceptance ($\alpha_1$ = .69).

### *Mentor-Youth Relationship Quality (T2 only)*

*Youth Emotional Engagement* was measured using an eight-item youth-reported scale including items such as, “When I’m with my mentor, I feel excited” (Rhodes, Reddy, Roffman, & Grossman, 2005). The items were scored on a four-point likert scale, ranging from 1 = “not at all true” to 4 = “very true” and a mean score was calculated, with higher scores indicating higher levels of emotional engagement ($\alpha_2$ = .84).

*Youth Unhappiness* was measured using a six-item youth-reported scale that includes items such as, “When I am with my mentor, I feel disappointed” (Rhodes et al., 2005). The items were scored on a four-point scale, ranging from 1 = “not at all true” to 4 = “very true” and a mean score was calculated, with higher scores indicating greater levels of unhappiness ($\alpha_2$ = .68).

*Match Duration (T2 only)*

*Match Duration* was a single-item variable referring to the total number of days youth had been in an open match as measured at T2.

*Outcome Variables (T1 & T2)*

*Overall Academic Performance* was determined based on teachers’ ratings of youth’s academic performance on a single-item five-point scale ranging from 1 = “below grade level” to 5 = “excellent” (Pierce, Hamm, & Vandell, 1999).

*Unexcused Absences* were measured using a single-item teacher-reported measure in which teachers reported the number of times in the previous four weeks that youth had been absent from school without an excuse.

*Classroom Effort* was measured using a six-item subscale of the Research Assessment Package for Schools-Teachers, a tool that has been validated in urban and suburban schools among youth from diverse racial and ethnic backgrounds (Institute for Research and Reform in Education, 1998). Teachers rated how often students demonstrated effort in the classroom (e.g., “works hard in class,” “does more than is required of him/her”) on a four-point scale ranging from 1 = “never” to 4 = “very often.”

Means were calculated, with a higher score indicating a higher level of effort ($\alpha_1 = .90$, $\alpha_2 = .90$).

*Classroom Affect* was measured using a three-item scale based on teacher reports of whether youth appear happy, angry, or depressed in the classroom (e.g. "In my class, this child appears happy") (Herrera, 2004). Teachers rated youth on a four-point scale ranging from 1 = "never" to 4 = "very often." The measure was calculated as the mean of the three items, with higher scores reflecting more positive classroom affect ($\alpha_1 = .77$, $\alpha_2 = .77$).

*Prosocial Behavior* was measured using an eight-item subscale from the Child Behavior Scale (Ladd & Profilet, 1996) in which teachers rated how frequently youth demonstrate prosocial behavior toward their peers (e.g., "kind toward classmates" and "offers help or comfort when classmates are upset") using a four-point scale where 1 = "never" and 4= "very often." The scale has been demonstrated to yield reliable and valid information among samples of youth in elementary and middle school from diverse racial and socio-economic backgrounds (Ladd, Herald-Brown, Andrews, 2009; Ladd & Profilet, 1996). The measure was calculated as a mean of the eight items, with higher scores reflecting more prosocial behavior ($\alpha_1 = .92$, $\alpha_2 = .94$).

*Self-Perceptions of Academic Abilities* was measured using a six-item youth-reported subscale of the Self-Perception Profile for Children (SPPC) (Harter, 1985). The items assessed youth's estimation of their own academic competence, using items such as, "I do very well at my class work" and "I feel that I am just as smart as other kids my age." The original version of the instrument was adapted using a four-point likert scale, ranging from 1 = "not at all true" to 4 = "very true." The measure was calculated as a mean of the six items, with higher scores reflecting higher levels of self-perceived academic abilities ($\alpha_1$ = .70, $\alpha_2$ = .72).

*Global Self-Worth* was measured using an eight-item youth-reported subscale of the Self-Esteem Questionnaire (DuBois, Felner, Brand, Phillips, & Lease, 1996) that measures the level of youth's self-worth, using items such as, "I am happy with the way I can do most things" and "I am the kind of person I want to be." The scale has demonstrated reliability and validity among youth in grades 5 through 8 of diverse racial backgrounds (DuBois et al., 1996). Respondents rated items on a four-point scale ranging from 1 = "not at all true" to 4 = "very true." Higher mean scores reflect more positive self-evaluations ($\alpha_1$ = .76, $\alpha_2$ = .80).

### *Covariates (T1 only)*

*Substance Use* was measured using four youth-reported items adapted from the Self-Reported Behavior Index (Brown et al., 1986). Youth reported whether they had ever used alcohol, tobacco, marijuana and other drugs, and, if so, how frequently during the past three months. The response scale and the reference period were modified for the current study (the original measure asks for a report of use in the past month). The items were combined to form a dichotomous variable where "1" indicates any previous substance use and "0" indicates no reported history of substance use.

*Demographic Characteristics* included youth's grade in school, gender, and minority status at baseline. These variables were selected based on patterns of significant differences between profiles.

### *Statistical Methods*

To categorize youth based on their pre-existing relationships, Latent Profile Analysis (LPA), a person-centered approach, was employed. A person-centered approach is appropriate for identifying patterns within individuals' responses based on its capacity to consider multiple characteristics simultaneously (Bergman & Trost, 2006; Magnusson, 1998; O'Brien, 2005). LPA is a model-based procedure that reveals categorical latent variables from observed continuous variables and generates probabilities for group membership. This approach provides a statistically rigorous method of detecting patterns of associations among youth relationships across contexts. Furthermore, this approach allows for the examination of relatively homogenous sub-groups of youth based on variables of interest, in this case, their relationship networks.

LPA was conducted using the mixture model in M-Plus, Version 5 (Muthén & Muthén, 2007) on youth-reported measures of baseline parent, teacher, and peer relationships. This allowed for the identification of distinct profiles of youth with similar patterns of responses in reporting on their relationships with parents, teachers, and peers. Models were tested with a single profile, two profiles and three profiles. Since it is not appropriate to test models with a greater number of profiles than the number of variables used to create those profiles, all possible models were tested, varying model restraints (e.g., correlating variables within the model). Fit indices, including the Bayesian Information Criteria (BIC) and sample size adjusted BIC, entropy statistics, and average probabilities for most likely latent variable memberships, were compared.

Considering the possible differences in youth's relationships with adults based on their age, it was important to test the measurement equivalence across different age groups after establishing a latent profile model. To this end, an unconstrained, semi-constrained, and fully constrained multigroup latent profile analysis (MLPA) was conducted with two age groups—grade four and five (60% of the sample) versus grades six through nine (40% of the sample)—as the grouping variable. This procedure tests whether or not the two age groups' profile structures can be considered to be the same. While the number of profiles are kept the same in these models, in the unconstrained model, both the size of profiles (the percentage of youth in each profile) and the means and variances of baseline parent, teacher, and peer relationships in each profile are free to vary. On the other hand, in the semi-constrained model, the baseline parent, teacher, and peer relationships in each profile are constrained to be equal across the two age groups, and the profile size is free to vary. If the semi-constrained model fits the data as well as the unconstrained model, the structure of the model can be concluded to be the same across age groups. Finally, in the fully constrained model, both the profile size and baseline parent, teacher, and peer relationships are constrained to be equal across both age groups. If the fully constrained model fits the data as well as the semi-constrained model, the profile size can be concluded to be equivalent across age groups. We used the Bayesian information criterion (BIC) and sample size adjusted BIC to compare the fit of these different LPA models (see Geiser, Lehmann & Eid, 2006 for a detailed example of multigroup mixture model).

After grouping youth by the categorical latent variable revealed from the LPA (relational profile), a two-level random-intercept regression model was used to examine whether relational profile moderated the impact of mentoring, while accounting for clustering by school. In addition, analyses of variance (ANOVAs) were used to examine associations between profiles and match duration and relationship quality. Finally, race, gender, and age group were also investigated as potential moderators of the impact of mentoring, again using two-level random-intercept regression models.

## Results

### *Profile Results*

A three-profile model had the best fit to the data, with a BIC of 8951.10, a sample size adjusted BIC of 8884.39, and an entropy score of .63 (see Table 3). The average probabilities for most likely latent variable membership were high (.90 for Profile 1, .80 for Profile 2, and .80 for Profile 3), indicating a high level of certainty in determining membership in a given profile. Profile 1 ("Relationally Vulnerable") was characterized by youth reports of low quality parent relationships, low quality teacher relationships, and average levels of peer acceptance ($N$ = 388, 34% of total). Profile 2 ("Relationally Adequate") was characterized by average parent relationship quality, average teacher relationship quality, and average peer acceptance ($N$ = 516, 45% of total). Profile 3 ("Relationally Strong") was characterized by high quality parent relationships, high quality teacher relationships, and relatively high levels of peer acceptance ($N$ = 232, 20% of total) (see Figure 1 and Table 4). Notably, there were significant differences between all profiles on all three relationship variables, with the exception of peer acceptance. For this variable, both Relationally Adequate and Relationally Vulnerable youth were significantly lower than Relationally Strong youth, but they did not differ significantly from each other.

The results of the MLPA showed that the semi-constrained model had the smallest BIC (6929.66) and sample-size adjusted BIC (6847.08), compared to the unconstrained

(7022.12 & 6872.83) and fully constrained models (6988.15 & 6911.92). This indicates that, while the size of profiles differed across age group, the structure of the profiles was consistent across the two age groups. Based on these results, the same profile model was used for the full sample in the remaining analyses.

*Baseline Differences between Profiles*

Results of baseline group differences among youth in each profile are presented in Table 5. As indicated in the MLPA, there were significant differences in school grade level among youth in the three profiles, $F(2, 1136) = 32.1$, $p < .001$, with Relationally Strong youth having a mean grade of 4.79 ($SD = 1.09$), Relationally Adequate youth having a mean grade of 5.30 ($SD = 1.30$), and Relationally Vulnerable youth having a mean grade of 5.67 ($SD = 1.46$). Minority youth were also slightly more likely to be in the Relationally Vulnerable or the Relationally Adequate profile than in the Relationally Strong profile, $\chi^2$ $(2, N = 1136) = 9.27$, $p < .01$, and there was a trend for girls to be in the Relationally Strong or Relationally Adequate profile in contrast to the Relationally Vulnerable profile, $\chi^2$ $(2, N = 1136) = 4.94$, $p = .08$.

Baseline differences between groups for outcome variables were also examined (see Table 6). Relationally Vulnerable youth demonstrated significantly lower academic performance, prosocial behavior, classroom effort, ($p < .01$), and self-perceptions of academic abilities and global self worth ($p < .001$), than Relationally Adequate or Relationally Strong youth at baseline, as well as marginally lower classroom affect than Relationally Strong youth. Notably, however, Relationally Adequate and Relationally Strong youth did not differ significantly from each other on most outcome variables, only showing significant differences in global self-worth and self-perceptions of academic abilities.

### *Mentoring Impacts by Profile*

A two-level, random-intercept regression model was conducted using Stata, 11.0 (StataCorp, 2009) to examine the impact of mentoring on each of the three profiles of youth, while accounting for clustering by school. Based on the pattern of significant group differences between profiles, grade in school, gender, and minority status were included as covariates, along with the baseline level of the outcome variable being tested. Youth in the control group reported slightly higher levels of substance use at baseline (15% vs. 11%), $\chi^2$ (2, $N$ = 1133) = 4.52, $p < .05$), thus this variable was also included as a covariate in the models.

Relationally Adequate youth who were in the treatment group showed significantly higher levels of academic performance ($p < .01$) and prosocial behavior ($p < .05$), and marginally significantly higher levels of classroom effort ($p = .07$) and self-perceptions of academic abilities ($p = .07$) than Relationally Adequate youth who were in the control group (see Table 7). In contrast, Relationally Strong youth did not show significant differences between the treatment and control groups on any of the outcome variables, and Relationally Vulnerable youth only showed marginally significant improvement ($p = .09$) on one outcome variable, specifically decreased unexcused absences. Moreover, while not all of the effects reached statistical significance, it is notable that for five of the seven outcome variables, the same pattern was observed with Relationally Adequate youth tending to show greater (although, non-significant, in some cases) impacts from mentoring than

Relationally Strong or Relationally Vulnerable youth. The two exceptions to this pattern were self-perceptions of academic abilities and unexcused absences. All profiles showed trends toward fewer unexcused absences, although only among Relationally Vulnerable youth did this effect reach marginal significance ($p = .09$), and both Relationally Vulnerable and Relationally Adequate youth showed trends toward improvements in self-perceptions of academic abilities, although only among Relationally Adequate youth did this trend reach marginal significance.

In addition to examining the main effect of mentoring in each relational profile, we were also interested in determining whether youth in the Relationally Adequate profile derived greater benefits from mentoring than youth in the Relationally Vulnerable and Relationally Strong profiles. A two-level random-intercept regression model, accounting for clustering by school, was conducted to test for interaction effects between treatment group and a dummy variable for youth who were in the Relationally Adequate profile (versus youth in either of the other two profiles). Grade in school, gender, minority status, baseline substance use, and baseline level of the outcome variable were included as covariates. Significant interaction effects were observed between treatment group and relational profile for prosocial behavior ($p < .05$), and marginally significant effects were observed for overall academic performance ($p = .06$) and for classroom affect ($p = .05$) (see Table 8).

### *Additional Analyses*

We also examined intermediate outcomes including mentor-youth relationship quality and match length. The association between baseline relational profile and mentor-youth relationship quality was tested using two measures of relationship quality: youth emotional engagement (*M* = 3.59, range = 1.00 to 4.00, *SD* = .54) and youth unhappiness (*M* = 1.34, range = 1.00 to 4.00, *SD* = .53). The three profiles did not differ significantly on either of these measures. The association between relational profile and match length (*M* = 134.14 days, range = 0 to 251 days, *SD* = 63.92 days) was also explored, revealing no significant differences in match length among the three profiles.

In addition to examining relational profile as a moderator of impacts, subgroup analyses exploring potential differential impacts from the mentoring intervention by gender, race (minority vs. White) and age group (grades four and five versus grades six through nine) were examined. These analyses failed to reveal significant effects, with the exception of one marginally significant interaction effect between age group and classroom effort (*p* = .07).

# Discussion

The results of this study suggest that there are meaningful differences in the quality of youth’s baseline relationships with their parents, teachers, and peers, and that these differences may help to explain why some youth are more likely to benefit from the guidance and support of volunteer mentors than others. In particular, person-centered analysis suggested three distinct relational profiles: (1) youth who were most relationally vulnerable, struggling particularly in their relationships with their parents and teachers; (2) youth who displayed moderately close relationships with most people in their lives, adults and peers alike; and (3) youth who had the strongest relationship networks, showing especially positive relationships with their parents and teachers. These groups, in turn, experienced differential benefits from school-based mentoring.

Youth who already had very positive relationships with other key adults and peers in their lives did not benefit significantly from mentoring on any of the outcome variables tested. Youth who were most relationally vulnerable at baseline benefited more than those who had the strongest relationships, yet they too derived relatively few benefits. This group demonstrated only marginally significant improvements on one outcome (unexcused absences).

Youth who showed the greatest improvements from mentoring were characterized by moderately strong relationships at baseline. Such youth demonstrated significant improvements in overall academic performance and prosocial behavior, and marginally significant improvements in classroom effort and self-perceptions of academic abilities, relative to youth with similar pre-intervention relational profiles who did not receive mentoring. Moreover, they showed significantly stronger impacts from mentoring than did youth with especially strong or especially weak relationships in prosocial behavior and marginally stronger impacts in overall academic performance and classroom affect.

These findings are consistent with previous studies, which have shown that mentoring relationships can vary considerably in their effectiveness, depending on the characteristics of youth and mentors (Rhodes & DuBois, 2008; Grossman & Rhodes, 2002). The differential patterns might also help to explain the relatively disappointing effects that have emerged from recent meta-analyses (Eby et al., 2008; Jolliffe & Farrington, 2007) and large-scale, random assignment evaluations of youth mentoring (Herrera et al., 2007; Bernstein et al., 2009). When impacts from all of the matches are combined, positive outcomes are sometimes masked by the neutral and even negative outcomes associated with less effective matches. Interventions that, a priori, target the subgroup of youth that is mostly likely to benefit are likely to yield more promising effect sizes. At the same time, researchers should identify those factors that facilitate or impede the formation of effective mentoring ties among more vulnerable youth.

Youth with different baseline relational profiles did not differ significantly in perceptions of the quality of their relationships with their mentors, as measured by youth engagement in the relationship as well as unhappiness with the relationship. In fact, the vast majority of youth had positive perceptions of their relationships with their mentors. That most mentors were able to establish close, positive relationships, regardless of youth's past experiences in relationships with adults, is encouraging, as the relationship is the foundation of any change that may occur as a result of mentoring. Nonetheless, the current study suggests that these relationships were most strongly associated with positive youth outcomes for youth who had moderately strong relationships with adults before they began mentoring. It is not surprising that those who already had strong relationships with their parents, teachers and peers were also able to forge close ties with their mentors, even if they did not necessarily benefit from them. By contrast, vulnerable youth may have distanced themselves from their mentors in subtle ways that were not measured.

The differential effects of mentoring for youth with different relational profiles may also be partially explained by the fact that school-based mentoring is a relatively low dosage intervention. Mentors in this program met with youth approximately three times per month for an average of only five to six months over the course of the academic year. Youth who were most relationally vulnerable may have required a more intensive mentoring intervention or more specifically trained volunteer mentors. In fact, the meta-analysis conducted by DuBois, Holloway, et al. (2002) found that, although mentoring programs failed to demonstrate significant impacts among youth with individual risk factors (but without environmental risk factors), programs that implemented a majority of "best practices" were able to affect such youth. Similarly, a small study of the impact of volunteer mentoring on aggressive children found that youth who were rated by peers as high in narcissism or who had troubled relationships with their parents tend to benefit more from a comprehensive, multi-component mentoring program than from standard mentoring (Cavell & Hughes, 2000). Taken together, these studies suggest that more intensive models of mentoring programs may be more effective with youth whose relationship histories bring with them unique challenges.

It is also possible that the lack of benefits demonstrated by Relationally Strong youth may be due in part to a "ceiling effect," that is, because such youth reported higher scores than Relationally Vulnerable youth on most of the outcome variables at baseline, they may have had less room for improvement. However, it is notable that Relationally Strong youth differed from the Relationally Adequate youth on only two of the outcome variables at baseline (global self-worth and self-perceptions of academic abilities), and Relationally Adequate youth showed the strongest impacts from mentoring. It is therefore unlikely that baseline differences account for Relationally Strong youth failing to show significant impacts from mentoring. In fact, these data are consistent with other research demonstrating that youth with the highest levels of family support derive relatively fewer benefits from mentoring (DuBois, Holloway, et al., 2002; Grossman & Johnson, 1999;

Johnson, 1997). Although it is possible that these youth may benefit on outcomes that were not assessed in the current study, these results, in conjunction with previous research, suggest that mentoring interventions may be less efficacious for youth who already have a surfeit of adult support, and that such youth may be better served by other programs and activities that place less emphasis on relationship-building and more on developing their specific skills and interests. Referring such youth to other programs would also help to relieve the long waitlists characteristic of many volunteer mentoring programs.

For youth who had only marginally strong relationships—neither particularly difficult nor close—the individual attention from a caring mentor proved to be particularly effective. These youth may have the necessary foundation of trust and the skills to forge and benefit from close ties, yet, unlike the Relationally Strong youth, may not have experienced as many close relationships. In fact, because teachers' attention is frequently dominated by the most troubled youth, more moderately vulnerable youth are sometimes relatively neglected in the classroom (Pianta, 1999). It appears that school-based mentoring has the potential to give such youth the extra attention they need to help them make measurable gains in several key outcomes.

In addition to the practical implications for mentoring, this study also has interesting theoretical implications. The clusters resulting from Latent Profile Analysis are consistent with previous research, which has demonstrated considerable continuity between parent, teacher, and peer relationships (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Berlin & Cassidy, 1999; Carlson, Sroufe, & Egeland, 2004; Lynch & Cicchetti, 1992; Rydell, Bohlin, & Thorell, 2005; Sroufe, 1989). Notably, these profile structures did not differ by youth age. This may be due in part to the fact that the sample included a relatively narrow range of ages, with most of the participants (94%) falling between grades four and eight. However, previous research has also indicated that similar patterns of relationships may exist across age groups. Specifically, a study investigating social support in adolescents' relationships with their mothers, friends, and romantic partner in grade 10 and in grade 12 observed the same structure of relationship networks across youth in both grades (Laursen, Furman, & Mooney, 2006). This study also identified three profiles (high mother, friend, and romantic partners; low mother, friend, and romantic partner; and low mother, low friend, no romantic partner). Since they used median splits to group youth, they excluded the possibility of a middle group, yet both this study and the current study provide support for continuity across youth's relationships, as well as indicating similar profile structures across age groups. Nevertheless, in the current study, while profile structure was the same across age groups, youth age differed across profile. Specifically, Relationally Vulnerable youth tended to be older and Relationally Strong youth tended to be younger. This is consistent with previous research documenting youth's feelings of reduced closeness to teachers and other adults as they transition from elementary to middle school (Cattley, 2004; Lynch & Cicchetti, 1997).

While relational profile was significantly associated with grade level, it is notable that, with the exception of a marginally significant effect on one outcome variable, grade level failed to significantly moderate youth impacts from mentoring (also see Herrera et al., in press). As noted earlier, this could relate to the relatively constricted range of grade levels for youth in the study. In addition, youth age is associated with mentor age in this study.

Specifically, older youth were more likely to be matched with adult mentors, while younger children were more likely to be matched with high school student mentors, who may be less effective than adult mentors (Herrera, Kauh, Cooney, Grossman, & McMaken, 2008). As a result, differences in impacts across grade levels might have been masked due to differences in mentor characteristics.

Examination of the relational profiles also reveals that peer relationships did not appear to differ by profile to the same extent as teacher and parent relationships. In particular, Relationally Vulnerable and Relationally Adequate youth did not differ significantly in their relationships with peers. Although this may be in part a function of the instrument, which measured peer acceptance as opposed to relationship quality and attachment, it also may be related to the fact that there is a more natural transference from parent to adult teacher relationships (Hartup, 1989). Furthermore, the fact that youth's relationships with their mentors tended to be positive, regardless of their relationships with their parents or teachers, suggests that mentors may be viewed in some ways as a hybrid between an adult and a peer, particularly since a large percentage of mentors to younger youth were high school students. Mentors may have the potential to serve as a bridge between peer and adult relationships, allowing even those youth with insecure parental relationships to update their working models of attachment through positive relationships with mentors (Rhodes & DuBois, 2006). Although considered to be relatively stable over time, working models are flexible to modification in response to changing life circumstances, such as engaging in emotionally supportive relationships (Belsky & Cassidy, 1994). Indeed, with the increases in perspective-taking and interpersonal understanding that often accompany this stage of development, adolescence may lend itself uniquely to the revision of working models (Main, Kaplan, & Cassidy, 1985). Analyses of therapeutic alliances (Goldfried, 1995), home visitors (Olds, Kitzman, Cole, & Robinson, 1997), and mentoring relationships provide additional support for such revision. In fact, although not measured in this study, a common mechanism thought to underlie the effectiveness of mentoring is its potential to influence youth's relationships with their parents and teachers (Rhodes et al., 2000; Rhodes, Reddy, & Grossman, 2005; Thomson & Zand, 2010). Of course, these processes take time (Grossman & Rhodes, 2002), and it may be that the dosage provided in the current study was insufficient for complex processes such as the revision of working models of attachment to occur, particularly among the most relationally vulnerable youth.

Additional research should specify the critical inputs necessary for more vulnerable subgroups of youth to benefit from mentoring interventions. Within this context, it will be important to include outcomes representing a range of developmentally salient domains, particularly since youth might display different competencies at different developmental stages (Luthar, 2006; Masten, 2001; Zand et al., 2009). Once the necessary threshold of quality, intensity, and duration is established, it will also be important to explore the underlying processes governing mentors' influence in different groups. In some cases, for example, mentors may function as alternative or secondary attachment figures, providing a secure base from which youth can achieve crucial social and cognitive competencies. In other cases, the relationship might have a positive impact by providing role modeling and opportunities for mastery (Rhodes & Lowe, 2009).

Although this study has several strengths, including longitudinal data from multiple sources and a large, national sample, there also are limitations that should be noted. Youth and parents or guardians who consented to participate in the study may have differed from those who declined to participate. Moreover, all data were drawn from youth in Big Brothers Big Sisters SBM programs, limiting our ability to generalize our findings to other mentoring programs that may differ in structure. For example, the Big Brothers Big Sisters SBM programs include a relatively large percentage of high school aged mentors, who have been found to be somewhat less effective than older volunteer mentors (Herrera et al., 2008). Likewise, because youth in school-based mentoring programs tend to spend less time with their mentors than youth in community-based mentoring programs, results might differ in more intensive programs, perhaps allowing Relationally Vulnerable youth to derive more benefits from the intervention. It also should be noted that the analyses are based on a relatively short follow-up period in a sample in which a significant number of matches ended even before the follow-up. It may be that stronger effects across a broader range of youth would be observed if youth were matched with a higher proportion of older volunteers in more sustained relationships.

In addition, while differences in mentor-youth relationship quality between profiles were not detected, it is possible that more subtle, unmeasured differences may exist. Future studies using more sensitive measures, possibly including qualitative components (e.g., in-depth interviews), are needed to further explore the role mentor-youth relationships may play in mediating the association between pre-intervention relationships and youth outcomes. This study would have benefited from more extensive measures of attachment, such as the Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1996) and other scales that have been more directly linked with attachment-relevant constructs (McElhaney, Allen, Stephenson, & Hare, 2009). Likewise, given the importance of the development of autonomy during adolescence and the complex interconnections between attachment and autonomy strivings, future studies might also include indices of autonomy (McElhaney et al., 2009).

It is also worth noting that relationship profiles were based solely on youth self-report, while outcomes were based on both teacher report and youth self-report. The inclusion of teacher reports could be problematic, particularly if teachers knew which students were receiving mentoring and biased their responses in favor of them. Herrera et al., (in press) investigated this possibility and found no evidence that teachers systematically inflated their assessments of youth as a function of their group status.

Furthermore, while our analyses revealed associations between baseline relational profiles and mentoring impacts, it is possible that there exist underlying factors that may contribute both to relationship difficulties and to difficulties in benefiting from a mentoring relationship. For example, highly mobile youth may have more difficulty establishing strong relationships with teachers and peers, as well as establishing lasting relationships with mentors. In addition, our analysis of youth's support networks focused solely on parents, teachers, and peers, excluding support derived from other caregivers such as natural mentors, older siblings, and extended family members.

Despite these limitations, this study represents an important step in considering the key role that children's and adolescents' relationship histories play in influencing the benefits that are derived from youth mentoring interventions. Future research is recommended to better discern the patterns suggested in this study and to further explore the processes through which relationship histories may influence mentoring experiences.

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Table 1.

*Demographic Characteristics of Youth (N = 1139)*

| Demographic characteristics | Number | Percentage |
|---|---|---|
| Gender | | |
| Male | 522 | 46% |
| Female | 617 | 54% |
| Grade in School[a] | | |
| 4th | 406 | 36% |
| 5th | 279 | 25% |
| 6th | 275 | 24% |
| 7th | 106 | 9% |
| 8th | 6 | 1% |
| 9th | 67 | 6% |
| Race/Ethnicity[a] | | |
| White | 426 | 37% |
| Hispanic/Latino | 259 | 23% |
| Black/African American | 202 | 18% |
| Native American | 67 | 6% |
| Asian/Pacific Islander | 11 | 1% |
| Multiracial | 142 | 13% |
| Other | 32 | 3% |
| Economic Status[a] | | |

| | | |
|---|---|---|
| Free/Reduced Lunch | 679 | 60% |
| Not Free/Reduced Lunch | 304 | 27% |
| Missing Data | 156 | 14% |
| Geographic Location | | |
| Columbus, OH | 114 | 10% |
| Denver, CO | 69 | 6% |
| Ellsworth, ME | 45 | 4% |
| St. Louis, MO | 172 | 15% |
| Cleveland, OH | 100 | 9% |
| Oak Harbor, WA | 69 | 6% |
| Dallas, TX | 168 | 15% |
| Show Low, AZ | 154 | 14% |
| Dalton, GA | 186 | 16% |
| Wilkes-Barre, PA | 62 | 5% |

[a] Percentages add up to more than 100% due to rounding.

Table 2. *Zero-Order Correlation Table*

| | | *1.* | *2.* | *3.* | *4.* | *5.* | *6.* | *7.* | *8.* | *9.* | *10.* | *11.* | *12.* | *13.* | *14.* | *15.* | *16.* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | PR | - | | | | | | | | | | | | | | | |
| 2. | TR | .39** | - | | | | | | | | | | | | | | |
| 3. | SA | .20** | -.00 | - | | | | | | | | | | | | | |
| 4. | AP | .13** | .17** | .10** | - | | | | | | | | | | | | |
| 5. | PB | .09** | .20** | .01 | .32** | - | | | | | | | | | | | |
| 6. | CA | .10** | .12** | .14** | .31** | .55** | - | | | | | | | | | | |
| 7. | CE | .14** | .23** | .03 | .56** | .60** | .50** | - | | | | | | | | | |
| 8. | SPAA | .32** | .26** | .33** | .29** | .05 | .09** | .23** | - | | | | | | | | |
| 9. | GSW | .40** | .26** | .45** | .18** | .05 | .12** | .12** | .54** | - | | | | | | | |
| 10. | UA | -.03 | -.09** | .01 | -.13** | -.12** | -.09** | -.14** | .03 | .05 | - | | | | | | |
| 11. | UH (T2) | -.10* | -.13** | -.04 | -.06 | -.10* | -.04 | -.03 | -.10* | -.12** | -.03 | - | | | | | |
| 12. | EE (T2) | .01* | .11* | -.06 | -.03 | .06 | .03 | -.01 | .05 | .12** | .05 | -.71** | - | | | | |
| 13. | Gender | .04 | .14** | -.04 | .15** | .28** | .13** | .29** | -.00 | -.04 | -.02 | -.08 | .07 | - | | | |
| 14. | MS | .02 | -.10** | .08** | -.01 | .05 | .11** | .07* | .11** | .07* | -.03 | .05 | -.02 | .02 | - | | |
| 15. | Grade | -.20** | -.28** | .11** | -.01 | -.10** | -.02 | -.04 | -.09** | -.05 | .09** | -.01 | -.13** | -.01 | .14** | - | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16. | School | -.03 | -.02 | .04 | .11** | .12** | .08* | .08* | -.10** | -.10** | -.08* | -.05 | -.02 | .03 | .11** | .26** | - |
| 17. | ML (T2) | .00 | .06 | .01 | .03 | .00 | .05 | .03 | .05 | .021 | -.01 | -.00 | .13** | .00 | .01 | -.10** | -.07* |

*Note*. PR = Parent Relationship, TR = Teacher Relationship, SA = Social Acceptance, AP = Academic Performance, PB = Prosocial Behavior, CA = Classroom Affect, CE = Classroom Effort, SPAA = Self-Perception of Academic Abilities, GSW = Global Self-Worth, UA = Unexcused Absences, UH = Unhappiness, EE = Emotional Engagement, MS = Minority Status, ML = Match Length.

**$p < .01$; *$p < .05$.

Table 3.

*Fit Indices for 1-Profile, 2-Profile, and 3-Profile Latent Profile Analysis Solution*

| | 1-Profile Solution | 2-Profile Solution | 3-Profile Solution |
|---|---|---|---|
| Bayesian (BIC) | 9672.36 | 9058.77 | 8951.10 |
| Sample-Size Adjusted BIC | 9650.12 | 9014.30 | 8884.39 |
| Entropy | - | .63 | .63 |

Table 4.

*Unstandardized Means and Standard Errors for Baseline Relationships for 3-Profile Latent Profile Analysis Solution*

| | Profile 1: RV<br>(*n* = 388) | Profile 2: RA<br>(*n* = 516) | Profile 3: RS<br>(*n* = 232) | Profile Differences<br>*F* (3, 1136) |
|---|---|---|---|---|
| Baseline Parent Relationship | 2.77 (.03)$^a$ | 3.34 (.02)$^b$ | 3.69 (.02)$^c$ | 335.33*** |
| Baseline Teacher Relationship | 2.91 (.03)$^a$ | 3.43 (.01)$^b$ | 3.80 (.02)$^c$ | 338.58*** |
| Baseline Peer Acceptance | 2.55 (.04)$^a$ | 2.58 (.03)$^a$ | 2.74 (.05)$^b$ | 5.39** |

*Note*. $^{a,b,c}$ Means with different superscripts differ significantly by profile based upon Scheffe post hoc tests. RV = Relationally Vulnerable, RA = Relationally Adequate, RS = Relationally Strong.

**$p < .01$, ***$p < .001$.

Table 5.

*Descriptive Information for Youth Profiles*

| | Profile 1: RV ($n$ = 388) | Profile 2: RA ($n$ = 516) | Profile 3: RS ($n$ = 232) | Chi-Square Test/ F-Test |
|---|---|---|---|---|
| Girls | 192 (50%) | 291 (56%) | 131 (57%) | $\chi^2$ = 4.94‡ |
| Minority Status | 250 (64%) | 335 (65%) | 125 (54%) | $\chi^2$ = 9.27* |
| Free/Reduced Lunch | 228 (70%) | 319 (70%) | 132 (64%) | $\chi^2$ = 2.80 |
| Mean Grade Level in School | 5.67 (1.48)$^a$ | 5.30 (1.30)$^b$ | 4.79 (1.10)$^c$ | $F$ = 32.1*** |

*Note*. $^{a,b,c}$ Means with different superscripts differ significantly by profile based upon Scheffe post hoc tests. RV = Relationally Vulnerable, RA = Relationally Adequate, RS = Relationally Strong.

‡$p$ < .10, *$p$ < .05, **$p$ < .01, *** $p$ < .001.

Table 6.

*Means and Standard Deviations for Baseline Values in Outcome Variables for Youth Profiles*

| | Profile 1: RV ($n$ = 388) | Profile 2: RA ($n$ = 516) | Profile 3: RS ($n$ = 232) | $F$ test |
|---|---|---|---|---|
| Overall Academic Performance | 2.32 (1.03)$^{a}$ | 2.60 (1.12)$^{b}$ | 2.65 (1.12)$^{b}$ | 8.21*** |
| Prosocial Behavior | 3.03 (.59)$^{a}$ | 3.16 (.56)$^{b}$ | 3.19 (.53)$^{b}$ | 6.77** |
| Classroom Affect | 3.17 (.70)$^{a}$ | 3.23 (.66)$^{a}$ | 3.31 (.64)$^{a}$ | 2.81‡ |
| Classroom Effort | 2.61 (.76)$^{a}$ | 2.81 (.76)$^{b}$ | 2.92 (.72)$^{b}$ | 12.15*** |
| Self-Perceptions of Academic Abilities | 2.59 (.65)$^{a}$ | 2.77 (.60)$^{b}$ | 3.10 (.56)$^{c}$ | 49.06*** |
| Global Self-Worth | 3.01 (.62)$^{a}$ | 3.21 (.50)$^{b}$ | 3.45 (.44)$^{c}$ | 50.35*** |
| Unexcused | .42 (1.93)$^{a}$ | .25 (.98)$^{a}$ | .36 (1.20)$^{a}$ | 1.34 |

*Note*. $^{a,b,c}$ Means with different superscripts differ significantly by profile based upon Scheffe post hoc tests. RV = Relationally Vulnerable, RA = Relationally Adequate, RS = Relationally Strong.

‡$p$ < .10, *$p$ < .05, **$p$ < .01, ***$p$ < .001.

Table 7.

*Effects of Mentoring on Youth with Different Relational Profiles*

| | | Profile 1: RV | Profile 2: RA | Profile 3: RS |
|---|---|---|---|---|
| Overall Academic Performance | B | .00 | .21** | .05 |
| | 95% CI | (-.17, .18) | (.06, .36) | (-.17, .27) |
| | Effect Size | .00 | .19 | .04 |
| Prosocial Behavior | B | -.04 | .09* | -.04 |
| | 95% CI | (-.15, .06) | (.00, .18) | (-.15, .08) |
| | Effect Size | .06 | .15 | .06 |
| Classroom Affect | B | -.07 | .07 | -.04 |
| | 95% CI | (-.20, .05) | (-.03, .17) | (-.18, .10) |
| | Effect Size | .10 | .10 | .06 |
| Classroom Effort | B | .05 | .10‡ | -.11 |
| | 95% CI | (-.07, .17) | (.00, .21) | (-.26, .05) |
| | Effect Size | .06 | .13 | .14 |
| Self-Perceptions of Academic Abilities | B | .09 | .09‡ | -.02 |
| | 95% CI | (-.03, .20) | (.00, .18) | (-.14, .11) |
| | Effect Size | .15 | .15 | .03 |
| Global Self-Worth | B | -.04 | .07 | -.01 |
| | 95% CI | (-.16, .08) | (-.02, .15) | (-.13, .10) |
| | Effect Size | .07 | .12 | .02 |

| | | | | |
|---|---|---|---|---|
| Unexcused Absences | B | -.25‡ | -.17 | -.17 |
| | 95% CI | (-.53, .03) | (-.39, .06) | (-.51, .17) |
| | Effect Size | .16 | .11 | .11 |

*Note*. RV = Relationally Vulnerable, RA = Relationally Adequate, RS = Relationally Strong.

‡*p*< .10, **p* < .05.

Table 8.

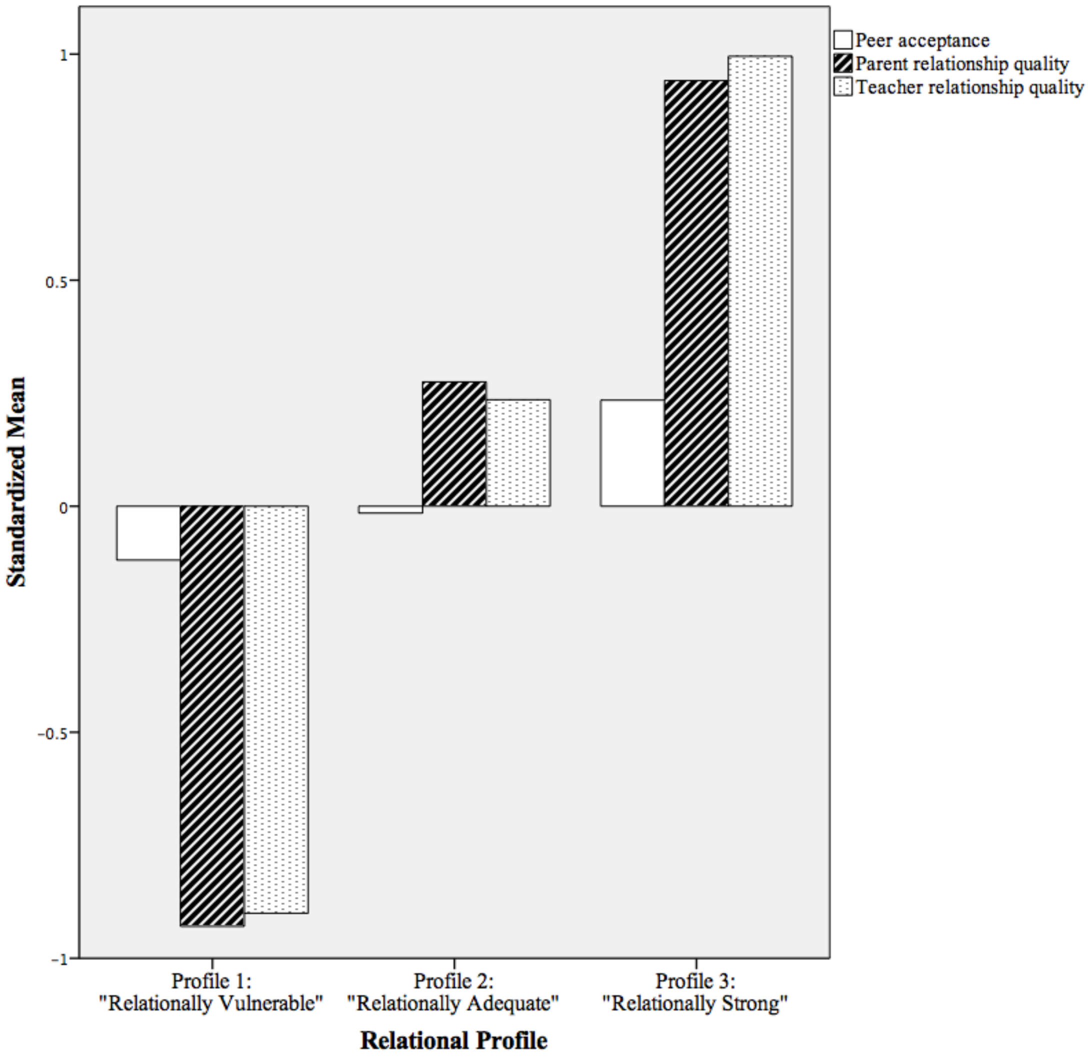
*Interaction Effects Between Treatment Group and Relationally Adequate Youth*

| | Interaction Effects | Effect size | 95% Confidence Interval |
|---|---|---|---|
| Overall Academic Performance | .19‡ | .17 | (.00, .39) |
| Prosocial Behavior | .12* | .19 | (.00, .24) |
| Classroom Affect | .14‡ | .21 | (.00, .28) |
| Classroom Effort | .10 | .13 | (-.05, .23) |
| Self Perceptions of Academic Abilities | .03 | .05 | (-.10, .15) |
| Global Self-Worth | .08 | .13 | (-.05, .20) |
| Unexcused Absences | .13 | .1 | (-.18, .45) |

*Note*. ‡$p < .10$, *$p < .05$.

# Figure Caption

*Figure 1.* Standardized Means for Baseline Relationships for 3-Profile Latent Profile Analysis Solution


Peer acceptance
Parent relationship quality
Teacher relationship quality
Standardized Mean
1
0.5
0
-0.5
-1
Profile 1: "Relationally Vulnerable"
Profile 2: "Relationally Adequate"
Profile 3: "Relationally Strong"
Relational Profile