

The Impact of School-Based Mentoring on Youths With Different Relational Profiles

Sarah E. O. Schwartz, Jean E. Rhodes, and
Christian S. Chan
University of Massachusetts Boston

Carla Herrera
Public/Private Ventures, Philadelphia, Pennsylvania

Associations between youths' relationship profiles and mentoring outcomes were explored in the context of a national, randomized study of 1,139 youths (54% female) in geographically diverse Big Brothers Big Sisters school-based mentoring programs. The sample included youths in Grades 4–9 from diverse racial and ethnic backgrounds, the majority of whom were receiving free or reduced-price lunch. Latent profile analysis, a person-oriented approach, was used to identify 3 distinct relational profiles. Mentoring was found to have differential effects depending on youths' preintervention approach to relationships. In particular, youths who, at baseline, had satisfactory, but not particularly strong, relationships benefited more from mentoring than did youths 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

Youth mentoring programs such as Big Brothers Big Sisters (BBBS) pair youths with volunteers who are trained to provide support and guidance. Such programs have experienced tremendous growth in the past 2 decades. Millions of volunteer mentors are involved in youths' 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 nonparental adults can make in the lives of youths (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 youths 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 have also highlighted a range of 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 youths who may not be reached by other forms of mentoring and its potential to connect a broad array of community members with youths' daily academic and social experiences in the school setting, potentially improving youths' 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 youths (Bernstein et al., 2009; Herrera et al., 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 evalu-

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Sarah E. O. Schwartz, Jean E. Rhodes, and Christian S. Chan, Department of Psychology, University of Massachusetts Boston; Carla Herrera, Public/Private Ventures, Philadelphia, Pennsylvania.

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Correspondence concerning this article should be addressed to Jean E. Rhodes, Department of Psychology, University of Massachusetts, Boston, MA 02125. E-mail: jean.rhodes@umb.edu

ation of BBBS SBM programs (Herrera et al., 2007) to examine whether the quality of youths' preintervention relationships with their parents, teachers, and peers was associated with the benefits they later derived from SBM.

Background

Not all youths 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 youths with serious emotional, behavioral, or academic problems nor a necessary inoculation for all youths (Rhodes & DuBois, 2006). In addition to youths' 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, youths 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, youths 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, and Soucy (2005), for example, found that young adults with insecure parental attachments felt relatively less security in their relationships with mentors. Furthermore, youths with deeply rooted relational difficulties, such as aggressive and antisocial behaviors, which tend to be more resistant to change (see 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 youths who show moderate to severe individual risk factors, such as academic or behavioral difficulties (DuBois, Holloway, et al., 2002; Jolliffe & Farrington, 2007).

As suggested earlier, such variability in benefits may stem, in part, from youths' 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 youths' relationship experiences might affect their approaches to mentoring. Some youths entering mentoring programs have had a history of deeply supportive relationships, whereas 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 and Rhodes (2002), for example, found that youths who had sustained emotional, sexual, or physical abuse had less enduring volunteer men-

tor relationships. Such youths may hold negative relational expectations and biases, leading them to interpret ambiguous gestures (e.g., canceled 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, 2000). These more negative reactions, in turn, may reduce mentors' enthusiasm and persistence, undermining both the quality and longevity of the mentoring relationship. By contrast, youths 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 et al., 2010). Depending on the extant social resources of such youths, however, their relationships may take different courses. Youths with an abundance of adult and peer support may fail to invest fully in the relationship, leaving their mentors feeling unnecessary, whereas youths in need of guidance and support may engage with their mentors in ways that enrich the quality and longevity of the match.

Youths' proclivity for 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 have 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 in relations with mentors (Allen & Land, 1999). Similarly, peer and romantic relationships may increasingly compete 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 earlier.

Current Study

In this study, we drew on the national evaluation of BBBS (Herrera et al., 2007) to explore the possibility that the quality of youths' preintervention relationships would be associated with their 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 youths who, at baseline, were less successful in their relationships with parents, teachers, and peers. Likewise, we examined whether effects were less pronounced among youths who, at baseline, already had an abundance of such ties. Specifically, the analyses were designed to test (a) whether youths could be grouped in meaningful ways as a function of their baseline relationships with parents, teachers, and peers and, if so, (b) whether the baseline relational profiles of such youths moderated the effects of mentoring on youth outcomes, as well as whether they were associated with match duration and relationship quality.

Method

Participants

Youths in this random assignment impact evaluation were recruited from 10 BBBS agencies across the country (serving a total of 71 participating schools), all of which had been operating SBM

programs for at least 4 years, served at least 150 youths, 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 youths who met the following criteria were invited to participate in the study: (a) were in fourth through ninth grades at the start of the study, (b) had parental consent to participate, and (c) had not been referred because of a crisis (e.g., referred by Child Protective Services). Of the total 1,139 youths participating in the study, 54% were female, and the majority of participants were White (37%), Hispanic/Latino (23%), or Black/African American (18%; see Table 1). Although data were not collected on language spoken in the home, 10 percent were identified by teachers as having limited proficiency in English. 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 youths were receiving free or reduced-price lunch, and 39% lived in a single-parent home. On the basis of teacher reports, 51% of youths 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, 18% were college students, and the remaining volunteers were nonstudent adults. BBBS programs had recruited mentors 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

Youths were recruited to participate in the study through BBBS agencies and participating schools. Youth participants completed baseline surveys at their school—surveys 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 youths in middle and high school settings, youths' science, social studies, English as a second language, or homeroom teacher completed the survey. Teachers of 1,009 youths (of the 1,139) completed baseline surveys.

After youths completed the baseline survey, they were randomly assigned to either 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 youths and 959 teachers completed surveys) and the fall of the second school year (968 youths and 920 teachers completed surveys). A survey firm administered follow-up surveys at youths' schools or by phone if youths had moved or were absent from school. Surveys were available in both Spanish and English.

Although mentors committed to meeting with youths 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 64% of youths in the treatment group were still meeting with the mentor with whom they were originally matched. As a result, youths 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 youths were no longer meeting with a mentor, in many cases because youths had transferred to a new school. Of those youths 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 youths 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 youths' demographic characteristics; measures of parent, teacher, and peer relationship quality; mentoring relationship quality; mentoring 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 SBM 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

Table 1
Demographic Characteristics of Youth Participants (N = 1,139)

Characteristics	Number	Percentage
Gender		
Male	522	46
Female	617	54
Grade level		
4	406	36
5	279	24
6	275	24
7	106	9
8	6	1
9	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, Ohio	114	10
Denver, Colorado	69	6
Ellsworth, Maine	45	4
St. Louis, Missouri	172	15
Cleveland, Ohio	100	9
Oak Harbor, Washington	69	6
Dallas, Texas	168	15
Show Low, Arizona	154	14
Dalton, Georgia	186	16
Wilkes-Barre, Pennsylvania	62	5

^a Percentages total more than 100% due to rounding.

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), on the basis of our hypothesis that relationship history may influence the degree to which youths benefit from mentoring, baseline measures of these variables were instead used to create youths' relational profiles. In recognition of the significant role mentor relationship quality and match duration play as intermediate outcomes in mentoring (see 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 on the basis of 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 data at Time 1 (T1) and first follow-up data at Time 2 (T2) 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-child relationship quality. This was assessed with a 16-item youth-reported scale combining the Parent Trust subscale and the Parent Communication subscale of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). The IPPA has been used with youths 12–20 years of age 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 4-point Likert-type 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. This was measured with 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 because 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 4-point Likert-type 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. This was measured with a six-item youth-reported subscale of the Self-Perception Profile for Children (SPPC; Harter, 1985) containing statements assessing how accepted youths feel by their peers (e.g., difficulty making friends, popularity). The SPPC has demonstrated reliability, validity, and stability among cross-cultural samples of youths in elementary and middle school (Schumann et al., 1999), although some evidence has suggested it may be less reliable among African American girls (Winters, Myers, & Proud, 2002). The original version of the instrument was adapted by using a 4-point Likert-type 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. This was measured with 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 4-point Likert-type 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. This was measured with a six-item youth-reported scale that includes items such as "When I am

Table 2
Zero-Order Correlations for Baseline Relationship Variables, Outcomes, and Covariates

Variable	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-perceptions of academic abilities; GSW = global self-worth; UA = unexcused absences; UH = unhappiness; T2 = Time 2; EE = emotional engagement; MS = minority status; ML = match length.
* $p < .05$. ** $p < .01$.

with my mentor, I feel disappointed” (Rhodes, Reddy, et al., 2005). The items were scored on a 4-point Likert-type 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. This was a single-item variable referring to the total number of days that youths had been in an open match as measured at T2.

Outcome variables (T1 and T2).

Overall academic performance. This was determined on the basis of teachers’ ratings of youths’ academic performance on a single-item 5-point scale ranging from 1 (*below grade level*) to 5 (*excellent*; Pierce, Hamm, & Vandell, 1999).

Unexcused absences. These were measured with a single-item measure in which teachers reported the number of times in the previous 4 weeks that youths had been absent from school without an excuse.

Classroom effort. This was measured with a six-item subscale of the Research Assessment Package for Schools-Teachers, a tool that has been validated in urban and suburban schools among youths 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 4-point Likert-type 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. This was measured with a three-item scale based on teacher reports of whether youths appear happy, angry, or depressed in the classroom (e.g., “In my class, this child appears happy”; Herrera, 2004). Teachers rated youths on a 4-point Likert-type 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. This was measured with an eight-item subscale from the Child Behavior Scale (Ladd & Profilet, 1996) in which teachers rated how frequently youths demonstrate prosocial behavior toward their peers (e.g., “Offers help or comfort when classmates are upset”) using a 4-point Likert-type scale where 1 (*never*) and 4 (*very often*). The scale has been demonstrated to yield reliable and valid information among samples of youths in elementary and middle school from diverse racial and socioeconomic 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. This was measured with a six-item youth-reported subscale of the SPPC (Harter, 1985). The items assessed youths’ estimation of their own academic competence (e.g., self-assessments and social comparisons of intelligence and class work). The original version of the instrument was adapted using a 4-point Likert-type 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. This was measured with an eight-item youth-reported subscale of the Self-Esteem Questionnaire (DuBois, Felner, Brand, Phillips, & Lease, 1996) that measures the

level of youths’ self-worth through 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 youths of diverse racial backgrounds in Grades 5–8 (DuBois et al., 1996). Respondents rated items on a 4-point Likert-type 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. This was measured with four youth-reported items adapted from the Self-Reported Behavior Index (Brown, Clasen, & Eicher, 1986). Youths reported whether they had ever used alcohol, tobacco, marijuana, or other drugs and, if so, how frequently during the past 3 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. This included youths’ grade in school, gender, and minority status at baseline. These variables were selected on the basis of patterns of significant differences between profiles.

Statistical Methods

To categorize youths on the basis of their preexisting relationships, latent profile analysis (LPA), a person-centered approach, was employed. A person-centered approach is appropriate for identifying patterns within individuals’ responses on the basis of 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 subgroups of youths based on variables of interest, in this case, their relationship networks.

LPA was conducted using the mixture model in Mplus, 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 youths 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. Because 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 that included 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 youths’ relationships with adults on the basis of 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, semiconstrained, and fully constrained multigroup latent profile analysis (MLPA) was conducted with two age groups—Grade 4 and 5 (60% of the sample) versus Grades 6–9 (40% of the sample)—as the grouping variable. This procedure tests whether the two age groups’ profile structures can be considered to be the

same. Although the number of profiles is kept the same in these models, in the unconstrained model both the size of profiles (the percentage of youths 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 semiconstrained 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 semiconstrained model fits the data as well as does the unconstrained model, then 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 does the semiconstrained model, then the profile size can be concluded to be equivalent across age groups. We used the 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 a multigroup mixture model).

After grouping youths 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 were used to examine associations between profiles, 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 8,951.10, a sample-size-adjusted BIC of 8,884.39, 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

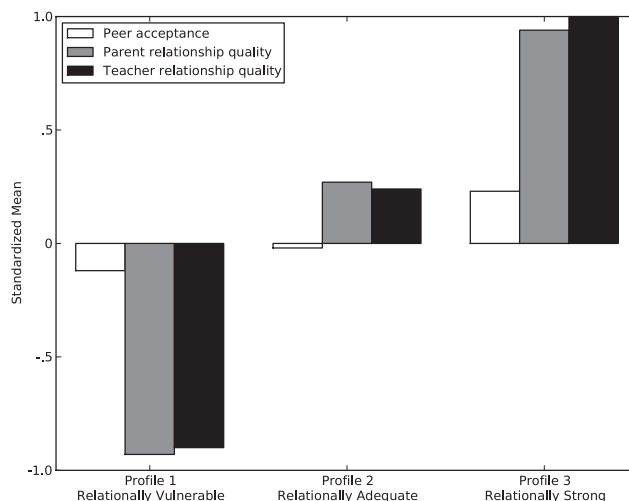


Figure 1. Standardized means for baseline relationships for the three-profile latent profile analysis solution.

all three relationship variables, with the exception of peer acceptance. For this variable, both relationally adequate and relationally vulnerable youths were significantly lower than relationally strong youths, but they did not differ significantly from each other.

The results of the MLPA showed that, regarding the BIC and sample-size-adjusted BIC, respectively, the semiconstrained model had the smallest (6,929.66 and 6,847.08), compared with the unconstrained (7,022.12 and 6,872.83) and fully constrained (6,988.15 and 6,911.92) models. This indicates that although the size of profiles differed across age groups, the structure of the profiles was consistent across the two age groups. On the basis of 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 between youths in each profile are presented in Table 5. As indicated in the MLPA, there were significant differences in school grade level among youths in the three profiles, $F(2, 1136) = 32.1, p < .001$, with relationally strong youths having a mean grade of 4.79 ($SD = 1.09$), relationally adequate youths having a mean grade of 5.30 ($SD = 1.30$), and relationally vulnerable youths having a mean grade of 5.67 ($SD = 1.48$). Minority youths were also slightly more likely to be in the relationally vulnerable or the relationally adequate profile than in the relationally strong profile, $\chi^2(2, N = 1,136) = 9.27, p < .01$,

Table 3
Fit Indices for One-, Two-, and Three-Profile Latent Profile Analysis Solutions

Variable	One-profile solution	Two-profile solution	Three-profile solution
BIC	9,672.36	9,058.77	8,951.10
Sample-size-adjusted BIC	9,650.12	9,014.30	8,884.39
Entropy		.63	.63

Note. BIC = Bayesian information criteria.

Table 4

Unstandardized Means (and Standard Errors) for Youths' Baseline Relationships for the Three-Profile Latent Profile Analysis Solution

Relationship	Profile 1: RV (<i>n</i> = 388)	Profile 2: RA (<i>n</i> = 516)	Profile 3: RS (<i>n</i> = 232)	Profile differences: <i>F</i> (3, 1136)
Parent	2.77 _a (0.03)	3.34 _b (0.02)	3.69 _c (0.02)	335.33***
Teacher	2.91 _a (0.03)	3.43 _b (0.01)	3.80 _c (0.02)	338.58***
Peers	2.55 _a (0.04)	2.58 _a (0.03)	2.74 _b (0.05)	5.39**

Note. Means with different subscripts differ significantly by profile on the basis of Scheffe post hoc tests. RV = relationally vulnerable; RA = relationally adequate; RS = relationally strong.

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

and there was a trend for girls to be in the relationally strong or relationally adequate profile rather than the relationally vulnerable profile, $\chi^2(2, N = 1,136) = 4.94, p = .08$.

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

Mentoring Impacts by Profile

A two-level, random-intercept regression model was conducted using Stata (Release 11.0) to examine the impact of mentoring on each of the three profiles of youths, while accounting for clustering by school. On the basis of the pattern of significant group differences between profiles, we included grade in school, gender, and minority status as covariates, along with the baseline level of the outcome variable being tested. Youths in the control group reported slightly higher levels of substance use at baseline (15% vs. 11%), $\chi^2(2, N = 1,133) = 4.52, p < .05$; thus this variable was also included as a covariate in the models.

Relationally adequate youths 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 did relationally adequate youths who were in the control group (see Table 7). In contrast, relation-

ally strong youths did not show significant differences between the treatment and control groups on any of the outcome variables, and relationally vulnerable youths showed only marginally significant improvement ($p = .09$) on one outcome variable, specifically decreased unexcused absences. Moreover, although 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 youths tending to show greater (although nonsignificant in some cases) impacts from mentoring than did relationally strong or relationally vulnerable youths. 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 youths did this effect reach marginal significance ($p = .09$), and both relationally vulnerable and relationally adequate youths showed trends toward improvements in self-perceptions of academic abilities, although only among relationally adequate youths did this trend reach marginal significance ($p = .07$).

In addition to examining the main effect of mentoring in each relational profile, we were also interested in determining whether youths in the relationally adequate profile derived greater benefits from mentoring than did youths 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 youths who were in the relationally adequate profile (vs. youths 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

Table 5

Descriptive Information for Youth Profiles at Baseline

Variable	Profile 1: RV (<i>n</i> = 388)	Profile 2: RA (<i>n</i> = 516)	Profile 3: RS (<i>n</i> = 232)	χ^2/F test
Girls	192 (50%)	291 (56%)	131 (57%)	$\chi^2(2, N = 1,136) = 4.94^\dagger$
Minority status	250 (64%)	335 (65%)	125 (54%)	$\chi^2(2, N = 1,136) = 9.27^*$
Free/reduced lunch	228 (70%)	319 (70%)	132 (64%)	$\chi^2(2, N = 1,136) = 2.80$
Grade level: <i>M</i> (<i>SD</i>)	5.67 _a (1.48)	5.30 _b (1.30)	4.79 _c (1.09)	$F(2, 1136) = 32.1^{***}$

Note. Means with different subscripts differ significantly by profile on the basis of Scheffe post hoc tests. RV = relationally vulnerable; RA = relationally adequate; RS = relationally strong.

$^\dagger p < .10$. * $p < .05$. *** $p < .001$.

Table 6
Means (and Standard Deviations) for Baseline Values in Outcome Variables for Youth Profiles

Variable	Profile 1: RV (n = 388)	Profile 2: RA (n = 516)	Profile 3: RS (n = 232)	F test
Overall academic performance	2.32 _a (1.03)	2.60 _b (1.12)	2.65 _b (1.12)	F(2, 977) = 8.21 ^{***}
Prosocial behavior	3.03 _a (0.59)	3.16 _b (0.56)	3.19 _b (0.53)	F(2, 999) = 6.77 ^{**}
Classroom affect	3.17 _a (0.70)	3.23 _a (0.66)	3.31 _a (0.64)	F(2, 996) = 2.81 [†]
Classroom effort	2.61 _a (0.76)	2.81 _b (0.76)	2.92 _b (0.72)	F(2, 998) = 12.15 ^{***}
Self-perceptions of academic abilities	2.59 _a (0.65)	2.77 _b (0.60)	3.10 _c (0.56)	F(2, 1135) = 49.06 ^{***}
Global self-worth	3.01 _a (0.62)	3.21 _b (0.50)	3.45 _c (0.44)	F(2, 1136) = 50.35 ^{***}
Unexcused absences	0.42 _a (1.93)	0.25 _a (0.98)	0.36 _a (1.20)	F(2, 954) = 1.34

Note. Means with different subscripts differ significantly by profile on the basis of Scheffe post hoc tests. RV = relationally vulnerable; RA = relationally adequate; RS = relationally strong.

† p < .10. ** p < .01. *** p < .001.

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 that included 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 = 0.54) and youth unhappiness (M = 1.34,

range = 1.00 to 4.00, SD = 0.53). 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; it revealed no significant differences in match length among the three profiles.

In addition to investigating relational profile as a moderator of impacts, we examined subgroup analyses exploring potential differential impacts from the mentoring intervention by gender, race (minority vs. White), and age group (Grades 4–5 vs. Grades 6–9).

Table 7
Effects of Mentoring on Youths With Different Relational Profiles

Variable and effect	Profile 1: RV	Profile 2: RA	Profile 3: RS
Overall academic performance			
B	0.00	0.21 ^{**}	0.05
95% CI	[−0.17, 0.18]	[0.06, 0.36]	[−0.17, 0.27]
Effect size	.00	.19	.04
Prosocial behavior			
B	−0.04	0.09 [*]	−0.04
95% CI	[−0.15, 0.06]	[0.00, 0.18]	[−0.15, 0.08]
Effect size	.06	.15	.06
Classroom affect			
B	−0.07	0.07	−0.04
95% CI	[−0.20, 0.05]	[−0.03, 0.17]	[−0.18, 0.10]
Effect size	.10	.10	.06
Classroom effort			
B	0.05	0.10 [†]	−0.11
95% CI	[−0.07, 0.17]	[0.00, 0.21]	[−0.26, 0.05]
Effect size	.06	.13	.14
Self-perceptions of academic abilities			
B	0.09	0.09 [†]	−0.02
95% CI	[−0.03, 0.20]	[0.00, 0.18]	[−0.14, 0.11]
Effect size	.15	.15	.03
Global self-worth			
B	−0.04	0.07	−0.01
95% CI	[−0.16, 0.08]	[−0.02, 0.15]	[−0.13, 0.10]
Effect size	.07	.12	.02
Unexcused absences			
B	−0.25 [†]	−0.17	−0.17
95% CI	[−0.53, 0.03]	[−0.39, 0.06]	[−0.51, 0.17]
Effect size	.16	.11	.11

Note. RV = relationally vulnerable; RA = relationally adequate; RS = relationally strong; CI = confidence interval.

† p < .10. * p < .05. ** p < .01.

Table 8
Interaction Effects Between Treatment Group and Relationally Adequate Youths

Variable	Interaction effects	Effect size	95% confidence interval
Overall academic performance	.19 [†]	.17	[0.00, 0.39]
Prosocial behavior	.12 [*]	.19	[0.00, 0.24]
Classroom affect	.14 [†]	.21	[0.00, 0.28]
Classroom effort	.10	.13	[-0.05, 0.23]
Self-perceptions of academic abilities	.03	.05	[-0.10, 0.15]
Global self-worth	.08	.13	[-0.05, 0.20]
Unexcused absences	.13	.1	[-0.18, 0.45]

[†] $p < .10$. ^{*} $p < .05$.

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 youths' baseline relationships with their parents, teachers, and peers and that these differences may help to explain why some youths are more likely than others to benefit from the guidance and support of volunteer mentors. In particular, person-centered analysis suggested three distinct relational profiles: (a) youths who were most relationally vulnerable, struggling particularly in their relationships with their parents and teachers; (b) youths who displayed moderately close relationships with most people in their lives, adults and peers alike; and (c) youths 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.

Youths 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. Youths 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).

Youths who showed the greatest improvements from mentoring were characterized by moderately strong relationships at baseline. Such youths 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 youths with similar preintervention relational profiles who did not receive mentoring. Moreover, they showed significantly stronger impacts in prosocial behavior from mentoring than did youths with especially strong or especially weak relationships, and they showed 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 youths and mentors (Grossman & Rhodes, 2002; Rhodes & DuBois, 2008). 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 (Bernstein et al., 2009; Herrera et al., 2007). 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 youths that is most 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 youths.

Youths 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 youths had positive perceptions of their relationships with their mentors. That most mentors were able to establish close, positive relationships, regardless of youths' past experiences in relationships with adults, is encouraging, because the relationship is the foundation for 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 youths 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 youths may have distanced themselves from their mentors in subtle ways that were not measured.

The differential effects of mentoring for youths with different relational profiles may also be partially explained by the fact that SBM is a relatively low dosage intervention. Mentors in this program met with youths approximately three times per month for an average of only 5–6 months over the course of the academic year. Youths 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) showed that although mentoring programs failed to demonstrate significant impacts among youths with individual risk factors (but without environmental risk factors), programs that implemented a majority of "best practices" were able to affect such youths. Similarly, a small study of the impact of volunteer mentoring on aggressive children found that youths who were rated by peers as high in narcissism or who had troubled relationships with their parents tend to benefit more from a comprehensive, multicomponent 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 youths whose relationship histories bring with them unique challenges.

It is also possible that the lack of benefits demonstrated by relationally strong youths may be due in part to a ceiling effect; that is, because such youths reported higher scores than did relationally vulnerable youths on most of the outcome variables at baseline, they may have had less room for improvement. However, it is notable that relationally strong youths differed from the relationally adequate youths on only two of the outcome variables at baseline (global self-worth and self-perceptions of academic abilities), and relationally adequate youths showed the strongest impacts from mentoring. It is therefore unlikely that baseline differences account for relationally strong youths failing to show significant impacts from mentoring. In fact, these data are consistent with other research demonstrating that youths 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 youths 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 youths who already have a surfeit of adult support and that such youths 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 youths to other programs would also help to relieve the long wait lists characteristic of many volunteer-mentoring programs.

For youths who had only marginally strong relationships—neither particularly difficult nor close—the individual attention from a caring mentor proved to be particularly effective. These youths may have the necessary foundation of trust and the skills to forge and benefit from close ties yet, unlike the relationally strong youths, may not have experienced as many close relationships. In fact, because teachers' attention is frequently dominated by the most troubled youths, more moderately vulnerable youths are sometimes relatively neglected in the classroom (Pianta, 1999). It appears that SBM has the potential to give such youths 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 et al., 2007; Berlin & Cassidy, 1999; Carlson et al., 2004; Lynch & Cicchetti, 1992; Rydell et al., 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 4 and 8. 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 youths in both grades (Laursen, Furman, & Mooney, 2006). This study also identified three profiles (high mother, high friend, and high romantic partner; low mother, low friend, and low romantic part-

ner; and low mother, low friend, no romantic partner). Because they used median splits to group youths, they excluded the possibility of a middle group, yet both this study and the current study provide support for continuity across youths' relationships, as well as indicate similar profile structures across age groups. Nevertheless, in the current study, although profile structure was the same across age groups, youth age differed across profile. Specifically, relationally vulnerable youths tended to be older, and relationally strong youths tended to be younger. This is consistent with previous research documenting youths' feelings of reduced closeness to teachers and other adults as they transition from elementary to middle school (Cattley, 2004; Lynch & Cicchetti, 1997).

Although 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 youths in the study. In addition, youth age is associated with mentor age in this study. Specifically, older youths were more likely to be matched with adult mentors, whereas younger children were more likely to be matched with high school student mentors, who may be less effective than adult mentors are (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 that teacher and parent relationships did. In particular, relationally vulnerable and relationally adequate youths 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 may also be related to the fact that there is a more natural transference from parent to adult teacher relationships (Hartup, 1989). Furthermore, the fact that youths' 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 because a large percentage of mentors to younger youths were high school students. Mentors may have the potential to serve as a bridge between peer and adult relationships, allowing even those youths 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 youths' relationships with their parents and teachers (Rhodes et al., 2000; Rhodes, Reddy, & Grossman, 2005; Thomson & Zand, 2010). Of course, these pro-

cesses 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 youths.

In future research, the critical inputs necessary for more vulnerable subgroups of youths to benefit from mentoring interventions should be specified. Within this context, it will be important to include outcomes representing a range of developmentally salient domains, particularly because youths 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 youths 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 informants and a large, national sample, there also are limitations that should be noted. Youths 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 youths 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 mentors who are of high school age, and they have been found to be somewhat less effective than older volunteer mentors (Herrera et al., 2008). Likewise, because youths in SBM programs tend to spend less time with their mentors than do youths in community-based mentoring programs, results might differ in more intensive programs, perhaps allowing relationally vulnerable youths to derive more benefits from the intervention. It should also 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 youths would be observed if youths were matched with a higher proportion of older volunteers in more sustained relationships.

In addition, although 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 preintervention relationships and youth outcomes. This study would have benefited from more extensive measures of attachment, such as the Adult Attachment Interview (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, whereas 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 youths as a function of their group status.

Furthermore, although our analyses revealed associations between baseline relational profiles and mentoring impacts, it is possible that there exist underlying factors that may contribute to both relationship difficulties and difficulties in benefiting from a mentoring relationship. For example, highly mobile youths may have more difficulty establishing strong relationships with teachers and peers, as well as establishing lasting relationships with mentors. In addition, our analysis of youths' 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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