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**African American Children At-Risk of Increasingly Conflicted Teacher-Student
Relationships in Elementary School**

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Abstract

Previous studies found different trajectories of conflicted relationships with teachers predicted academic underachievement. However, little is known about what places children at risk for atypical conflict trajectories. This follow-up study examines whether African-American ethnicity, IQ, and socioeconomic status (SES) are unique predictors of teacher-student conflict trajectories taking into account sociobehavioral predictors, including aggression and prosocial behavior. The study included an ethnically diverse sample of 657 academically at-risk children in which previously four latent growth classes of conflict trajectories (Grades 1-5) predicted underachievement. In this follow-up study, 6 predictors were examined: African-American ethnicity, SES, IQ (independent assessment), inhibitory control (performance measure), and aggression and prosocial behavior (peer assessment). The results demonstrated that African-American ethnicity, but not IQ and SES, uniquely predicted atypical conflict trajectories, while controlling for sociobehavioral predictors. African-American children were at risk of increasingly conflicted relationships with elementary school teachers, which has been found to increase the risk of academic underachievement in middle school.

Keywords: Teacher-student relationships, latent growth class conflict trajectories, aggression, prosocial behavior, inhibitory control, African American ethnicity

African American Children At-Risk of Increasingly Conflicted Teacher-Student Relationships in Elementary School

There is increasing evidence of the importance of children's positive relationships with teachers. Based on attachment theory and social motivational perspectives on learning, positive affective relationships with teachers are believed to foster emotional security and engagement in learning activities, which are necessary for adaptive school functioning and academic success (Connell & Wellborn, 1991; Pianta, 1992, Verschueren & Koomen, 2012).

A growing body of research has suggested deleterious effects of conflictual teacher-student relationships on children's behavioral and cognitive development in elementary school (Roorda, Koomen, Spilt, & Oort, 2011; Stipek & Miles, 2008). However, the large majority of studies has examined teacher-student relationships at one point in time as a predictor of subsequent school adjustment or has studied general trends in teacher-student relationships over time. Spilt, Hughes, Wu, and Kwok (2012) identified subgroups of academically at-risk boys and girls who followed different trajectories of warmth and conflict throughout elementary school. They found that the degree of underachievement manifested after 6 years coincided with the length and timing that children had conflictual relationships with teachers. A small group of boys with chronic conflict across Grades 1 to 5 performed much poorer on academic achievement tests than was expected based on their earlier achievement scores, IQ, and behavioral risk status (*high-stable conflict trajectory*, Figure 1). Children, regardless of gender, who experienced increasingly more conflicts with teachers over the years exhibited serious underachievement as well (*low-increasing conflict trajectory*, Figure 1). Somewhat surprisingly, children with conflictual relationships in the early school years but declining levels afterwards showed only minor or no underachievement in middle school (*high-declining conflict trajectory*,

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Figure 1). In contrast to these atypical conflict trajectories, the typical trajectory suggested low levels of conflict throughout elementary school for the majority of the children and was not associated with academic achievement (*low-stable conflict trajectory*, Figure 1).

Similar conflict trajectories have been reported by O'Connor, Collins, and Supplee (2012) in a relatively low-risk sample and by Harrison, Spilt, and Walker (2012) in a large Australian sample. Moreover, atypical conflict trajectories have been found to not only predict achievement (Harrison et al., 2012; Spilt et al., 2012), but also predicted externalizing (but not internalizing) problems (O'Connor et al., 2012).

However, little is known about what places children at risk for atypical conflict trajectories. Prior studies on conflict trajectories have examined a limited number of child and family characteristics and none of these have examined teacher or classroom characteristics. O'Connor et al. (2012) found that children with low family income and insecure attachments were more likely to follow atypical conflict trajectories. Furthermore, descriptive statistics for the current academically at-risk sample suggested that African-American children were at increased risk for atypical conflict trajectories (Spilt et al., 2012). According to multiple risk models (Gutman, Sameroff, & Cole, 2003; Meehan, Hughes, & Cavell, 2003), the social risk associated with African-American ethnicity could be amplified for academically at-risk children. Descriptive statistics also suggested that aggressive behavior, lower IQ, and SES were predictive of atypical conflict trajectories, but caution is needed because these factors were not tested simultaneously in a prediction model. Thus, it is possible that it is not African-American ethnicity, but African-American children being less behaviorally adjusted or having lower SES that explains why African-American children were at risk of atypical conflict trajectories (Jerome, Hamre, & Pianta, 2008). Likewise, not IQ itself but behavior problems associated with lower cognitive

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abilities could be predictive of atypical conflict trajectories (Eisenhower, Baker, & Blacher, 2007).

The current follow-up study was conducted to disambiguate prior findings and determine whether SES, IQ, and African-American ethnicity are unique predictors of conflict trajectories taking into account potential sociobehavioral confounds assessed in Grade 1. We examined different dimensions of sociobehavioral functioning that were not included in the original study, including prosocial behavior, aggression, and inhibitory control because each of these has been found important for the identification of at-risk children at school entry (Flanagan, Bierman, & Kam, 2003). Inhibitory control refers to the ability to regulate or inhibit behavior in response to instruction or expectations. Inhibitory control is an important aspect of the broader construct effortful control, a dimension of temperamental self-regulation, that predicts school adjustment and achievement. Furthermore, a more comprehensive measure of socioeconomic status was used than in the original study. Because teachers reported on conflict, performance measures and peer reports of sociobehavioral functioning were used to avoid shared method and source variance. The following research question guided the study: Do SES, IQ, and African-American ethnicity predict conflict trajectories above the effects of sociobehavioral functioning?

Method

Participants

Participants were 350 boys ($M_{\text{age}} = 6.62$, $SD = 0.39$) and 307 girls ($M_{\text{age}} = 6.51$, $SD = 0.38$) from three school districts and 35 schools. Participants were considered academically at-risk as all participants scored below the median on a district-administered measure of literacy in first grade. The ethnic composition was 39% Hispanic, 34% White Non-Hispanic, 23% African American, and 4% other among boys; and 39%, 31%, 25%, and 5%, respectively, among girls.

Most boys (63%) and girls (61%) had low socioeconomic status as indicated by income-based eligibility for free or reduced price lunch. Across grades, the ethnic composition of teachers ($N=207$; 86–96% female) was: White (73–84%), Hispanic (11–17%), and African American (2–9%). See Spilt et al. (2012) for more details about the sample, recruitment procedure, and measures.

Measures

Data were collected for six variables, including a measure of conflict trajectories as the dependent variable and five predictor variables. The measures used to collect these data are described below.

Predictor: Peer ratings of aggression and prosocial behavior. The peer rating of aggression and prosocial behavior began by reading the names of all classmates to each student and asking if he/she knew this child. The student were then read one aggression item and one prosocial item and asked to identify students who matched each item. The aggression item read: “Some kids start fights, say mean things, or hit others.” The prosocial item read: “Some kids help others, play fair, and share.” Following each item, the child was asked: “What kids in your class are like this?”. Children could nominate as many classmates as they wished (Cillessen & Bukowski, 2000). Reliable and valid data can be obtained in classrooms where as few as 40% of children participate (Marks, Babcock, Cillessen, & Crick, 2012). Therefore, sociometric scores were computed only for children in classrooms in which more than 40% of classmates participated. Scores were standardized within classrooms.

Predictor: Inhibitory control. Inhibitory control was measured using four tasks assessing children’s ability to deliberately slow down motor activity (Kochanska et al., 1997). In Walk-a-Line, children were asked to walk along a ribbon (12 ft long by 2.5 in wide) that was

taped onto the floor. In Star, Circle, and Telephone Poles, children were asked to trace geometric figures using a pencil without going outside the lines of the figures (Star and Circle) or to draw a line connecting two dots (Telephone Poles). Higher scores indicate better inhibitory control. A single research assistant individually timed children's behavior using stopwatches as children completed the tasks (i.e., in real time). Assessments were not video-recorded and therefore reliability for timings could not be calculated. For more details about the measures and its validity, see Liew, Chen, and Hughes (2010).

Predictor: Cognitive ability (IQ). Because many children in the sample were more proficient in other languages (e.g., Spanish) than English, IQ was tested with the abbreviated version of the Universal Nonverbal Intelligence Test (UNIT; Bracken & McCallum, 1998). The UNIT is a nonverbal, nationally standardized test of general intelligence that has demonstrated good psychometric properties (Bracken & McCallum, 1998; see also Spilt et al., 2012).

Predictor: Socioeconomic status (SES). A measure of SES was calculated as the mean of the standardized scores on three variables: non-eligibility for free or reduced price lunch (coded 0-1), highest educational level of any adult in the home (coded 1-10), and highest occupational level of any adult in the home (coded 1-9).

Predictor: Ethnicity. A dummy variable was created for African-American ethnicity (1 = African-American ethnicity; 0 = all other ethnicities).

Teacher-student conflict trajectories. An adapted teacher version of the Network of Relationships Inventory (Furman & Buhrmester, 1985) was employed to assess Conflict (6 items, $\alpha=.91$) using a 5-point Likert-type scale (1 =Not at All True; 5=Very True). Conflict refers to coercive teacher–student interactions characterized by discordance and mistrust (e.g., “This child and I often argue or get upset with each other”). Growth mixture models were examined to

identify conflict trajectory classes for boys and girls separately (see Spilt et al., 2012). The different conflict trajectories are presented in Figure 1.

Procedure

Conflict was measured annually in the spring from Grade 1-5. Predictor variables were assessed in Grade 1. Child measures were completed in individual interviews. Teachers received \$25 for each assessment package. Children received small prizes (e.g., pencils).

Data Analyses

Multinomial logistic regression analyses were conducted in Mplus (Muthen & Muthen, 1998-2011). Using the TRAINING option, class membership based on probability scores derived from the research of Spilt et al. (2012) were used as outcome variables. For instance, a child who has a probability of .80, .10, .05, and .05 for being in class 1, class 2, class 3, and class 4, respectively, will be assigned to class 1. Importantly, by using probability scores to indicate class membership, the uncertainty in class assignment is taken into account. Class membership (Figure 1) was regressed on Grade 1 predictors while controlling for the nested structure of the data (children nested in schools) using the cluster option in conjunction with the MLR estimator, which produces robust standard errors and accounts for possible non-normal distribution of the data. Analyses were conducted separately for boys and girls. To retain the full sample, missingness in the predictor variables was handled by creating five imputed datasets using the Bayesian method. Missingness on peer-rated measures was 21.8%. For all other variables, missingness ranged between 0.0 and 5.7%.

Results

Table 1 presents descriptive statistics. Multivariate models showed that only African-American ethnicity, Aggression, and Prosocial behavior had unique predictive value for both

boys and girls (Table 2). African-American ethnicity increased the likelihood of being in the Low-increasing trajectory compared to the Low-stable trajectory. Higher scores on Aggression increased the likelihood of being in the Low-increasing trajectory class and in the High-declining conflict trajectory class; and in the High-stable conflict trajectory class for boys. Higher scores on Prosocial behavior decreased the likelihood of being in the High-declining conflict trajectory class and in the Low-increasing trajectory for girls.

Discussion

The results indicated that African-American children, from this sample of students with below-average literacy skills, are at risk of increasingly conflictual relationships with elementary school teachers from Grade 1 to 5. In contrast to what descriptive statistics for this sample suggested (Spilt et al., 2012), IQ and SES did not predict atypical conflict trajectories when all predictors were tested simultaneously in a prediction model.

In this sample of children with below-average literacy skills, African-American children were more than twice as likely than other children to start school with only minor deviations in conflict but to develop increasingly conflictual relationships with teachers over time. This trend was linked to serious underachievement 6 years later when most children had made the transition to middle school (Spilt et al., 2012). Importantly, although African-American children in the current sample were more aggressive relative to White and Hispanic children according to their peers, the risk associated with African-American ethnicity could not be explained by African-American children being more aggressive or less prosocial. Nor could it be explained by greater socioeconomic adversity. African-American ethnicity made a unique contribution to the prediction of increasing conflict trajectories even when peer-rated aggression and SES were taken into account. These results align with other studies showing that African-American

children are more likely to receive disciplinary referrals or to be suspended after controlling for disruptive behavior and income (Bradshaw, Mitchell, O'Brennan, & Leaf, 2010; Jerome et al., 2009; Johnson, Boyden, & Pittz, 2001).

There may be several explanations for African-American children being overrepresented in the low-increasing conflict trajectory in this sample of children with below-average literacy skills. Considering the mismatch in racial backgrounds between the teacher workforce in US schools and that of pupils, it could be that cultural misunderstanding and intergroup bias become increasingly influential on children's relationships with teachers over time (Thijs, Westhof, & Koomen, 2012). Additional clues come from previous studies with the current sample. First grade teachers tended to underestimate the achievement of African-American children, but not White or Hispanic children, relative to performance on standardized achievement measures (Hughes, Gleason, & Zhang, 2005). They also reported lower quality relationships with parents of African-American children (Hughes et al., 2005). In a subsequent study, both low teacher expectations and poor parent-teacher relationships predicted lower subsequent achievement (Hughes & Kwok, 2007). The previous and current results are consistent with the integrative contextual approach (Garcia Coll et al., 1996), which posits that cultural discontinuity between home and school, and actual and perceived discrimination on the part of African-American children and their parents, may explain increasing conflict with teachers across the elementary school grades (Thomas, Caldwell, Faison, & Jackson, 2009). Future research is needed to reveal the processes that account for this racial risk.

Although African-American children may have more negative relationships with teachers, they are also more likely to benefit more from positive teacher-student relationships (Meehan et al., 2003; Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002). To improve teacher-

student relationships, recent research has found positive effects of teacher professional development interventions that offer a combination of curriculum training and classroom-based coaching to teachers and provide teachers with models of emotional and instructional support (Cappella et al., 2012; Pianta, Mashburn, Downer, Hamre, & Justice, 2008). Although it is likely that such programs would reduce race-based disparities in teacher-student relationship conflict, the empirical basis for such a claim is not yet available. Relationships between teachers and African-American children could also be promoted through multicultural teacher education and culturally sensitive teaching. Qualitative data analysis of videotapes of a teacher effective with African-American children highlights the need for teachers to strive for emotional connectedness with children at the dyadic and classroom level in correspondence with the collectivistic nature of African Americans (Cholewa, Amatea, West-Olatunji, & Wright, 2012).

Not surprisingly, aggression was another important predictor of atypical conflict trajectories. This finding corroborates research suggesting that early aggression may trigger cascading negative effects on children's development in the relational and academic domain (Dishion, Véronneau, & Myers, 2010; Stipek & Miles, 2008). However, the finding that aggression was also associated with high but declining conflict trajectories, that were not associated with academic failure in our previous study, also indicates that teacher-student conflict is not perfectly concordant with child risk and that conflict is not an irreversible process for all aggressive children. To better understand these processes, future research should include teacher and classroom characteristics. Prosocial behavior was also a significant, albeit a weaker and less consistent predictor of conflict trajectories, whereas inhibitory control did not predict conflict trajectories. Perhaps, a measure of regulatory control in emotionally-laden situations

would have been more closely tied to interpersonal functioning and conflict with teachers than the current measure of inhibitory control.

At least three limitations need to be noted. First, the sample was selected based on academic risk, which limits generalization of the findings. Second, because of the lack of ethnic diversity among teachers, we could not examine teacher-student ethnic match. Although ethnic match may be a poor proxy of cultural match, it is possible that ethnic mismatch rather than student ethnicity explains the results (Murray et al., 2008). Third, subgroup sizes were rather small resulting in limited statistical power to detect group differences. This could explain why African American ethnicity did not significantly predict membership of the chronic conflict trajectory despite a large regression coefficient and odds ratio.

In conclusion, this study demonstrates that African American children are at risk of increasingly conflicted relationships with teachers, while controlling for sociobehavioral functioning, IQ, and SES, which in turn increased their risk of academic underachievement (Spilt et al., 2012). This finding contributes to a growing body of research suggesting that “rather than leveling the playing field, (early) social experiences in school may contribute to widening racial disparities in educational attainment” (Hughes & Kwok, 2007, p.47-48).

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Figure

Figure 1. Conflict latent class trajectories for boys ($N=350$) and girls ($N=307$) from Grade 1 (Time 0) to Grade 5 (Time 4).

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Note. Picture reproduced from Spilt et al., 2012.

Table 1

Means, Standard Deviations, and Correlations for Boys (N=350) and Girls (N=307)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
<i>Boys</i>									
1. Conflict Grade 1	2.13	1.09	-						
2. Conflict Grade 5	1.96	1.00	.45*	-					
3. African American	-	-	.23*	.28*	-				
4. SES	-0.09	0.85	-.15*	-.12	-.25*	-			
5. IQ	93.39	14.38	-.19*	-.15*	-.28*	.20*	-		
6. Aggression	0.29	1.13	.51*	.32*	.28*	-.12*	-.19*	-	
7. Prosocial	-0.43	0.78	-.30*	-.19*	-.20*	.13*	.16*	-.21*	-
8. Inhibitory control	1.56	17.54	-.01	-.01	-.10	.15*	.02	-.07	.11
<i>Girls</i>									
1. Conflict Grade 1	1.65	0.85							
2. Conflict Grade 5	1.49	0.77	.51*						
3. African American	-	-	.18*	.35*					
4. SES	-0.07	.87	-.07	-.08	-.18*				
5. IQ	91.71	14.30	-.18*	-.13*	-.26*	.19*			
6. Aggression	-0.25	0.71	.37*	.31*	.09	.04	-.17*		
7. Prosocial	0.11	0.93	-.35*	-.27*	-.10	.07	.17*	-.28*	

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8. Inhibitory control -1.22 14.22 -.03 -.04 -.01 .01 .17* -.07 .07

Note. * $p \leq .05$ (two-tailed)

Table 2

Logistic Regression Coefficients of Grade 1 Predictors of Conflict Trajectories from Grade 1 to 5 (Multivariate Models).

	<u>Low-increasing (n = 61)</u>		<u>High-declining (n = 71)</u>		<u>High-stable (n = 17)</u>	
	<u>vs. Low-stable (n = 201)</u>		<u>vs. Low-stable (n = 201)</u>		<u>vs. Low-stable (n = 201)</u>	
	<i>B (SE)</i>	<i>Odds ratio</i>	<i>B (SE)</i>	<i>Odds ratio</i>	<i>B (SE)</i>	<i>Odds ratio</i>
Boys (N=350)						
African American	0.86 (0.32)*	2.36	0.45 (0.44)	1.57	1.93 (1.10)	6.89
SES	-0.30 (0.16)	0.74	-0.28 (0.21)	0.76	-0.40 (0.42)	0.67
IQ	0.01 (0.01)	1.01	-0.00 (0.01)	1.00	-0.01 (0.02)	0.99
Aggression	0.73 (0.17)*	2.08	1.27 (0.19)*	3.56	0.95 (0.31)*	2.59
Prosocial	-0.35 (0.27)	0.70	-1.08 (0.29)*	0.34	-0.35 (0.42)	0.70
Inhibitory control	-0.00 (0.01)	1.00	0.01 (0.01)	1.01	0.01 (0.01)	1.01
	<u>Low-increasing (n = 41)</u>		<u>High-declining (n = 54)</u>			
	<u>vs. Low-stable (n = 212)</u>		<u>vs. Low-stable (n = 212)</u>			
	<i>B (SE)</i>	<i>Odds ratio</i>	<i>B (SE)</i>	<i>Odds ratio</i>		
Girls (N=307)						
African American	1.00 (0.32)*	2.72	0.70 (0.41)	2.01		
SES	-0.16 (0.21)	0.85	-0.02 (0.15)	0.98		
IQ	-0.00 (0.02)	1.00	0.01 (0.01)	1.01		
Aggression	1.31 (0.28)*	3.71	1.49 (0.28)*	4.44		

Prosocial	-0.79 (0.22)*	0.45	-0.83 (0.27)*	0.44
Inhibitory control	-0.02 (0.02)	0.98	0.00 (0.01)	1.00

Note. * $p \leq .01$ (two-tailed)

Author Biographical Statements

Dr. Jantine Spilt is an assistant professor at the research division School Psychology and Child and Adolescent Development at the KU Leuven, Belgium. In her research, she focuses on understanding the impact of social classroom relationships, in particular teacher-student relationships, on children's socio-emotional, behavioral, and academic development.

Dr. Jan Hughes is a professor of Education Psychology at Texas A&M University. Her current research focuses on the effects of classroom characteristics, social classroom relationships, and grade retention on children's psychosocial and academic development.