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Gifted Students' Perceptions of Parenting Styles: Associations With Cognitive Ability, Sex, Race, and Age

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Abstract

Children whose parents are warm and responsive yet also set limits and have reasonable expectations for their children tend to have better outcomes than their peers whose parents show less warmth and responsiveness, have low expectations, or both. Parenting behavior is related to family race and children's sex, age, and cognitive ability. However, there is no work that examines how children's cognitive abilities are related to their perceptions of their mothers' and fathers' parenting styles and the extent to which these relationships are moderated by race, sex, and age in a sample of gifted students. Participants (*N* = 332, ages 9-17 years) attended a summer residential program for gifted students and completed the Parental Authority Questionnaire and the verbal battery of the Cognitive Abilities Test. Three main findings emerged. First, factor analyses provided support for the use of the Parent Authority Questionnaire with gifted populations. Second, findings from regression analyses as well as examinations of mean differences by cognitive ability level were consistent with earlier studies suggesting that more cognitively able students were likely to perceive their parents as employing a flexible (i.e., authoritative) parenting style. Finally, consonant with earlier studies with nonidentified populations, age, sex, and race were associated with parenting styles as reported by this group of identified gifted students. Results provide further support for the notion that authoritative parenting promotes positive outcomes for children, particularly those who have been identified as gifted.

Keywords

social and/or emotional development and adjustment, secondary age/developmental stage, factor analysis, qualitative methodologies

The style and patterns of parental interactions with their children have been implicated in children's academic and social outcomes as well as future opportunities (Amato & Fowler, 2002; Engels, Dekovic, & Meeus, 2002; Gray & Steinberg, 1999; Pettit, Bates, & Dodge, 1997). Children whose parents are warm and responsive yet also set limits and have reasonable expectations for their children tend to have better outcomes than their peers whose parents show less warmth and responsiveness, have low expectations, or both (Slicker, 1998; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Weiss & Schwarz, 1996). Although research indicates that parents' behavior toward their children varies according to family race and children's sex and age, there is also some evidence that parenting behavior varies as a factor of children's cognitive ability. Indeed, work by Abelman (1991), Cornell and Grossberg (1987), and Dwairy (2004) suggested that gifted children tend to have relationships with parents that are generally positive, indicating that parenting styles in response to these children are more likely to be authoritative (marked by high levels of warmth and demandingness). However, there is no work that examines how children's cognitive abilities are related to their perceptions of their mothers' and fathers' parenting styles and the extent to which these relationships are moderated by race, sex, and age in a sample of gifted students. Thus, the present study seeks to address this gap in the literature.

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Parenting Style

Baumrind's (1973) model of parenting style is widely used and supported. This model has two dimensions: demandingness and responsiveness. The point at which a parent falls on each of these two dimensions indicates the overall parenting style. The *authoritarian* parenting style (high in demandingness and low in responsiveness) is marked by "controlling, dictatorial, and punitive characteristics, restrict[ing] a child's sense of individual importance and potential for personal contribution within the family milieu" (Buri, Louiselle, Misukanis, & Mueller, 1988, p. 280). On the other hand, *authoritative* parenting (high in demandingness and high in responsiveness) is characterized by "clear and demanding parental direction moderated by an emphasis upon open lines of communication, allow[ing] children to discuss and participate in planning, decisions, and policies of the family" (Buri et al., 1988, p. 280). This style is typified by parent behavior that is warm and responsive while transmitting reasonable expectations (e.g., Steinberg et al., 1992). The third style, *permissive* (low in demandingness and high in responsiveness), is indicative of parents who make few demands on their children and allow them considerable freedom to make decisions in selecting those activities in which they will engage. Permissive parents also engage in minimal punishment behavior (Buri, 1991). Baumrind (1991) also identified a fourth parenting style, *neglecting–rejecting*, in which parents display neither demanding nor responsive parenting and fail to create structure for their children or monitor their behavior.

Congruence in Parenting Styles

Literature on parenting styles often rests on the assumption that both mothers and fathers parent in the exact same way, whether it is pure parenting or inconsistent parenting (e.g., Marsiglio, Amato, Day, & Lamb, 2000). Although evidence suggests that most sets of parents do show similar parenting styles (Winsler, Madigan, & Aquilino, 2005), Baumrind's (1973) study revealed that approximately one quarter of the mothers and fathers displayed different parenting styles. A study by Simons and Conger (2007) also indicated that a substantial number of mothers' and fathers' parenting is characterized by different styles. In their study, children reported that 22% of parents had different parenting styles, whereas observer reports showed that 42% of parents had different parenting styles. In contrast, Smetana's (1995) research with middle school students and their parents revealed differences in parents' perceptions (i.e., mothers perceived themselves as more authoritative and fathers perceived themselves as more authoritarian) but not in adolescents' perceptions of their parenting. Thus, when examining students' perceptions of parenting styles, it is important to include ratings of both mothers' and fathers' parenting rather than to assume that both parents display the same style.

Differences in Perceptions of Parenting Styles by Sex, Age, and Race

Smetana, Crean, and Barr (2005) argued that intraindividual (e.g., sex and race) and developmental (e.g., age) factors should be considered in the study of parenting styles. In a study conducted by Dornbusch, Ritter, Leiderman, Roberts, and Fraleigh (1987), female adolescents, compared with males, reported a significantly, but only slightly, lower level of authoritarian parenting. The adolescents in the Dornbusch et al. study did not differ across sex in reports of permissive or authoritative parenting styles. Furthermore, Dornbusch et al. did not find any differences across age (with participants ranging in age from 14 to 18 years) on reports of parenting style. Research does, however, show consistent ethnic/racial group differences in parenting practices and styles (Forehand & Kotchick, 1996; Garcia-Coll, Meyer, & Brillon, 1995; Grusec, 2002). The authoritative parenting style is most often associated with White, nondivorced, middle-class families (Darling, 1999), whereas an authoritarian parenting style is more prevalent in Asian American, African American, and Latino American families than in White families (Arredondo et al., 2006; Chao, 1994; Dornbusch et al., 1987; Lamborn, Dornbusch, & Steinberg, 1996).

Parenting and Cognitive Ability

Research on variability in parenting styles as a function of cognitive ability is rather sparse, but some work with very young children suggests that parents are more likely to display sensitivity and warmth toward children with better cognitive skills. In Bornstein, Hendricks, Haynes, and Painter's (2007) examination of predictors of maternal sensitivity and children's responsiveness with 2 year olds and their mothers, mothers showed more sensitivity toward toddlers who had a richer vocabulary, and toddlers were, in turn, more responsive to mothers when the toddlers had a richer vocabulary. In another study with toddlers, van Bakel and Riksen-Walraven (2002) found positive parental interactions with children (indicators of high responsiveness and high expectations) were associated with higher concurrent cognitive development. These findings suggest that cognitive ability may promote more positive exchanges between parents and children, thus fostering a more sensitive parenting style.

Although research on the parenting styles of parents of gifted children and adolescents is limited, existing research suggests gifted students' parents tend to be more authoritative and less authoritarian than parents of students who are not identified as gifted (Abelman, 1991; Cornell & Grossberg, 1987; Dwairy, 2004). In a study of gifted Arab adolescents, Dwairy (2004) found that parents of adolescents participating in a gifted program tended to rate their parents as more authoritative. According to Dwairy, the authoritarian parenting style appears to be the critical dynamic influencing the child–parent relationship and the gifted adolescent's well-being. This is

consistent with Robinson, Reis, Niehart, and Moon's (2002) assessment of best practices in parenting the gifted where they referred to the authoritarian home as an "ill-fitting environment" (p. 68) for the gifted adolescent. Similarly, Abelman (1991), in his examination of parent communication styles in families of gifted and nonidentified children, found that parents of gifted children engaged in more inductive interactions with their children. That is, they were more likely to display clear and open communication than parents of nonidentified, cognitively average children and parents of children with learning disabilities. Snowden and Christian (1999) examined parenting behaviors among parents of young gifted children and found that the parents' responses indicated flexibility and appropriate expectations, both characteristics of authoritative parenting. Karnes, Shwedel, and Steinberg (1984) examined fathers' attitudes toward parenting in a small sample of gifted and nonidentified preschoolers. Fathers of gifted children were significantly more likely to emphasize independence than those of nonidentified children, a parenting attitude congruent with an authoritative parenting style. Moss (1990) conducted a fascinating study of preschool-aged children's interactions with their mothers to determine the extent to which mothers of gifted children would use more metacognitive strategies in conversation than mothers of nonidentified children. Similarly, she examined the extent to which mothers' metacognitive strategy modeling was in response to the advanced abilities of the gifted children. Moss found that mothers of gifted children used far more metacognitive strategies than mothers of nonidentified children. Moss also concluded that mothers seemed to be responding to their gifted children's greater language competence, suggesting a bidirectional relationship between parents and children.

There is also some evidence that gifted students may fare less well in families where the parenting is more permissive. Specifically, families with gifted academic underachievers are more likely to be characterized by child-centered parenting that gradually becomes inconsistent over time (Rimm & Lowe, 1988). Indeed, oppositional relationships between parents and children, hectic and turbulent family life, and intense sibling rivalry are more likely in families where the gifted children are academic underachievers (Rimm & Lowe, 1988). In these cases, the parenting dyad typically consists of one authoritarian "taskmaster" parent and one permissive "child supporter and defender" parent (Rimm & Lowe, 1988). Collectively, then, research suggests that not only are gifted or high-ability children and adolescents more likely to have parents whose style demonstrates characteristics of authoritative parenting but that they are also more likely to have positive academic outcomes in households where authoritative parenting is practiced. Thus, it is important to understand the predictors of parenting styles of parents of precocious students; however, there is still much to learn in this area.

Thus, the present study is intended to gather current and more complete information about how gifted adolescents perceive their parents' parenting styles and the factors that may contribute to or be related to these perceptions. To that end, we addressed the following research questions: (a) Is the Parental Authority Questionnaire (PAQ) tenable for use with gifted populations? (b) To what extent are students' sex, race, age, and cognitive ability associated with their perceptions of mothers' and fathers' parenting styles? (c) Do students' sex, race, or age moderate the association between cognitive ability and perceptions of mothers' and fathers' parenting styles?

Method

Sample

Participants ($N = 332$) were attendees at a summer residential program for gifted students (SEP) at the University of Virginia in Charlottesville, Virginia. At the time students were selected and offered admission to the program, a letter was included in the acceptance packet inviting their participation in the study. The letter was accompanied by both parent and student consent forms. These forms were returned with registration materials if the parents and students agreed to participate (response rate: 35%). As consent forms were received, students were assigned codes that were used to identify all data from each student, and a form was mailed to the students on which they were asked to indicate the type of gifted and talented program they participated in at their home school (i.e., full day class, pull-out program, etc.).

The students completed all surveys on Tuesday during the first week of the SEP session they attended (there were three 2-week sessions) in classrooms at the University. They were divided by grade levels and last name. On entering the classroom, students were given cards with their name and code number. They picked up surveys with the code number matching the code on the index card. Following the session, all cards were destroyed. On Thursday of the same week, the same procedure was followed except that the card also indicated the color of the CogAT test booklet they were to select. Each student was assigned a test level one grade level above the grade they were to enter in the fall. The researchers entered all survey data into an SPSS spreadsheet; CogAT tests were scored by Riverside Publishing.

The average age of those students in the sample who completed the CogAT-6 and at least one of the parenting styles scales was 12.75 ($SD = 1.79$). The 332 students ranged from just more than 9 years old to almost 17 years old. Approximately 13% of the students were in 5th grade, 18% in 6th grade, 24% in 7th grade, 23% in 8th grade, 5% in 9th grade, 9% in 10th grade, and 9% in 11th grade. About 60% were females, and about 67% were White, with Asians (23%) being the largest minority group, followed by African Americans (6%).

Table 1. Descriptive Statistics for Parenting Authority Questionnaire Reduced Subscales

Scale	Mean	*SD*	Range	Cronbach's α
Mother Permissive	2.72	0.59	1.30-4.30	.72
Mother Authoritarian	3.10	0.71	1.00-5.00	.82
Mother Flexible	3.71	0.55	1.90-5.00	.73
Father Permissive	2.77	0.60	1.00-4.20	.72
Father Authoritarian	3.10	0.76	1.30-5.00	.85
Father Flexible	3.65	0.53	1.70-4.80	.75

Measures

Demographic information. Participants' sex, race, and age information was gathered from program enrollment forms. Race was coded dichotomously as White and non-White due to the paucity of individuals in non-White racial groups. Age was coded in years and months (e.g., 11.5 = 11 years and 6 months).

Parent Authority Questionnaire. Students' perceptions of their mothers' and fathers' parenting styles were measured with the PAQ (Buri, 1991). The PAQ is a child-report instrument designed to assess students' perceptions of both mothers' and fathers' parenting styles (permissive, authoritarian, and flexible/authoritative). The PAQ is a 30-item instrument with 10 permissive, 10 authoritarian, and 10 flexible statements where respondents rate their mother and father, separately, on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). The instrument yields six subscale scores for each child—one score in each of three parenting styles for both mother and father. The possible range of subscale scores varies from 10 to 50 (summed) or 1 to 5 (averaged), with a higher score indicating a higher perceived presence of a particular parental prototype. There is evidence that the scores on the original PAQ have good internal consistency (range = .74-.87) and stability (range = .77-.92; Buri, 1991; Buri et al., 1988). Table 1 provides the descriptive statistics of the sample for this instrument with reduced scales (see description of confirmatory factor analysis below).

CogAT-6. The Cognitive Abilities Test Form 6 (CogAT-6) Verbal Battery was used to estimate students' general reasoning ability. As recommended by Riverside Publishing, the more advanced level of the test for each age-group was used to avoid ceiling effects. According to the authors of the CogAT-6, the purpose of this group-administered test is to appraise "the level and pattern of *cognitive* development of students from kindergarten through grade 12" (DiPerna, 2005).

Estimates of internal consistency for each level of the verbal subtests exceeded .90. Reviewers of the CogAT-6 in the *Mental Measurements Yearbook* conclude that the tasks and items included in the CogAT-6 appear to measure the constructs described and that the item discrimination and floor/ceiling ranges are adequate, with minimal discrimination across genders. Strong concurrent validity evidence is provided with high correlations between the CogAT-6 and the Iowa Tests of Basic Skills and the Iowa Test of Educational Development (Lohman & Hagen, 2000). For the Multilevel Battery, a strong G factor emerges from factor analytic analysis with a clearly interpretable factor associated with each of the batteries. "These data support the claim that the CogAT-6 measures an abstract hypothetical construct called *cognitive* ability and intelligence" (DiPerna, 2005).

Results

Tenability of the PAQ With a Gifted Population

Because the PAQ was not normed with a gifted sample, we conducted a confirmatory factor analysis (CFA) to examine the factor structure of the 30 items with our sample. Using Mplus (Muthén & Muthén, 1998-2010), we estimated a CFA using WLSMV (weighted least squares mean- and variance-adjusted), which accounts for the categorical nature of the data and allows students with missing data on some items to remain in the analyses. Each item on the mother scale had less than 5% missing data, and for items relating to fathers' parenting style, there were slightly more missing data, although no item was missing more than 7% of data. This portion of the analyses, therefore, was an examination of the degree to which the three-factor PAQ model fit the data and was evaluated using model fit statistics, rather than effect sizes.

The original model of mother's parenting styles exhibited poor model fit, with a statistically significant chi-square ($p < .001$), comparative fit index (CFI) = .53, Tucker–Lewis *index (TLI)* = .67, and root mean square error of approximation (RMSEA) = .149. Modification indices indicated that removal of three items from the permissive factor and three items from the authoritative factor would improve model fit. Moreover, it conceptually made sense to remove these items. For instance, two of the removed items were hypothesized to load on the authoritative factor, but examination of the wording of those items revealed that they were somewhat ambiguous, including words such as "directs" and "directions," which may seem more authoritarian to students. With those revisions, the fit improved, with CFI increasing to .86, TLI increasing to .84, and RMSEA decreasing to .076.

Similar to the model of mother's parenting styles, the original model of father's parenting styles exhibited poor model fit, with chi-square being statistically significant ($p < .001$), CFI = .66, TLI = .64, and RMSEA = .107. By removing the same items, the model fit improved, with CFI increasing to .86, TLI increasing to .84, and RMSEA decreasing to .082. Although these fit indices are not strong, we deemed them adequate, particularly given that the internal consistency values for the reduced scales were similar to those for the original PAQ. For the current sample, Cronbach's alphas for the reduced scales are shown in Table 1.

Table 2. Perceptions of Mothers' Parenting Style

	Permissive					Authoritarian					Flexible				
	B	*SE B*	β	R^2	$R^2\Delta$	*B*	*SE B*	β	R^2	$R^2\Delta$	*B*	*SE B*	β	R^2	$R^2\Delta$
Block 1				.042**					.057***					.021	
Sex	.076	.072	.059			–.259	.080	–.18***			.087	.074	.067		
Race	–.094	.073	–.071			–.212	.082	–.143***			.053	.076	.040		
Age	–.065	.019	–.186***			–.005	.022	–.013			–.045	.020	–.125*		
Block 2				.063***	.02**				.106***	.05***				.022	.001
Cog	–.009	.004	–.153**			–.016	.004	–.238***			.001	.004	.021		
Block 3				.069***	.006				.108***	.002				.035	.014
Cog × Sex	.003	.007	.040			.000	.008	.002			.009	.007	.111		
Cog × Race	.006	.007	.072			–.005	.008	–.053			.007	.008	.081		
Cog × Age	.002	.002	.132			.001	.002	.073			.002	.002	.158		

Note. Cog = cognitive ability (from the Cognitive Abilities Test, Verbal Battery).
*p < .05. **p < .01. ***p < .001.

Explaining Differences in Perceived Parenting Styles

Multiple hierarchical regressions were conducted to examine the extent to which adolescent sex, race, age, and cognitive ability scores were associated with gifted students' perceptions of the parenting style exhibited by their mothers and fathers. Two sets of analyses were conducted; one set regressed gifted students scores for perceptions of their mothers' permissive, authoritarian, and flexible parenting styles on sex, race, age, and cognitive ability scores, and the other set regressed gifted students' scores for perceptions of their fathers' permissive, authoritarian, and flexible parenting styles on sex, race, age, and cognitive ability scores. Sex, race, and age were entered into the first block, cognitive ability scores were entered into the second block, and all two-way interactions between cognitive ability and race, sex, and age were entered into the third block (i.e., cognitive ability × sex, cognitive ability × race, cognitive ability × age). All variables were centered (Aiken & West, 1991) to avoid problems with multicollinearity.

Perceptions of mothers' parenting style. Results from models regressing perceptions of mothers' parenting style are summarized in Table 2. In the model regressing students' perceptions of their mothers' permissive parenting style, sex, race, and age explained 4% of the variance ($F_{3,307}$ = 4.528, p = .004, R^2 = .042), with younger children more likely to rate their mothers' parenting as permissive (β = −.186, p = .001). With the addition of cognitive ability scores in Block 2, 2% more of the variance in perceptions of mothers' permissive parenting was explained ($F_{4,306}$ = 5.127, p = .001, $R^2\Delta$ = .02, R^2 = .063), with children scoring lower on the test of cognitive abilities more likely to rate their mothers' parenting as permissive (β = −.153, p = .001). None of the interaction terms was a statistically significant predictor of perceptions of mothers' permissive parenting.

In the model regressing students' perceptions of their mothers' authoritarian parenting style, sex, race, and age explained 6% of the variance ($F_{3,307}$ = 6.146, p < .001, R^2= .057), with girls (β = −.180, p = .001) and non-White children (β = −.143, p = .01) more likely to rate their mothers' parenting as authoritarian. With the addition of cognitive ability scores in Block 2, 5% more of the variance in perceptions of mothers' authoritarian parenting was explained ($F_{4,306}$ = 9.101, p < .001, $R^2\Delta$ = .05, R^2= .106), with children scoring lower on the test of cognitive abilities more likely to rate their mothers' parenting as authoritarian (β = −.238, p < .001). None of the interaction terms was a statistically significant predictor of perceptions of mothers' authoritarian parenting.

In the model regressing students' perceptions of their mothers' flexible (authoritative) parenting style, sex, race, and age explained 2% of the variance ($F_{3,307}$ = 2.210, p = .087, R^2= .021); only age was significantly associated with students' perceptions of the mothers' flexible parenting (β = −.125, p < .05). Likewise, the models with cognitive ability scores and interactions terms were nonsignificant and did not explain any additional variance in students' perceptions of mothers' flexible parenting.

Perceptions of fathers' parenting style. Results from models regressing perceptions of fathers' parenting style are summarized in Table 3. In the model regressing students' perceptions of their fathers' permissive parenting style, sex, race, and age explained 1% of the variance ($F_{3,295}$ = 1.355, p = .257, R^2 = .014). With the addition of cognitive ability scores in Block 2, 1% more of the variance in perceptions of fathers' permissive parenting was explained ($F_{4,294}$ = 2.031, p = .09, $R^2\Delta$ = .013, R^2 = .027), with children scoring lower on the test of cognitive abilities more likely to rate their fathers' parenting as permissive (β = −.123, p = .046). None of the interaction terms was a statistically significant predictor of perceptions of fathers' permissive parenting.

Table 3. Perceptions of Fathers' Parenting Style

	Permissive					Authoritarian					Flexible				
	B	*SE B*	β	R^2	$R^2\Delta$	*B*	*SE B*	β	R^2	$R^2\Delta$	*B*	*SE B*	β	R^2	$R^2\Delta$
Block 1				.014					.044**					.006	
Sex	.064	.076	.049			−.238	.088	−.154**			.041	.077	.031		
Race	−.059	.079	−.043			−.149	.092	−.092			.093	.080	.068		
Age	−.036	.020	−.101			−.037	.024	−.090			−.008	.021	−.023		
Block 2				.027	.013*				.056**	.012				.006	.000
Cog	−.008	.004	−.123*			−.008	.004	−.115			.000	.004	−.002		
Block 3				.031	.004				.065**	.011				.019	.013
Cog × Sex	.003	.007	.032			−.004	.009	−.038			.003	.008	.039		
Cog × Race	.007	.008	.082			−.009	.009	−.096			.014	.008	.168		
Cog × Age	.001	.002	.079			.003	.002	.187			−.002	.002	−.155		

Note. Cog = cognitive ability (from the Cognitive Abilities Test, Verbal Battery).
*$p < .05$. **$p < .01$. ***$p < .001$.

In the model regressing students' perceptions of their fathers' authoritarian parenting style, sex, race, and age explained 4% of the variance ($F_{3,295} = 4.566$, $p = .004$, $R^2 = .044$), with girls ($\beta = -.154$, $p = .007$) more likely to rate their fathers' parenting as authoritarian. With the addition of cognitive ability scores in Block 2, 1% more of the variance in perceptions of fathers' authoritarian parenting was explained ($F_{4,294} = 4.371$, $p = .002$, $R^2\Delta = .012$, $R^2 = .056$), with a trend of children scoring lower on the test of cognitive abilities more likely to rate their fathers' parenting as authoritarian ($\beta = -.115$, $p = .057$). None of the interaction terms was a statistically significant predictor of perceptions of fathers' authoritarian parenting.

In the model regressing students' perceptions of their fathers' flexible parenting style, sex, race, and age explained less than 1% of the variance ($F_{3,295} = 0.615$, $p = .605$, $R^2 = .006$). With the addition of cognitive ability scores in Block 2, there was no increase in the variance in perceptions of fathers' flexible parenting explained ($F_{4,294} = 0.461$, $p = .764$, $R^2\Delta = .00$, $R^2 = .006$). In the model with all interaction terms (Block 3), 1% additional variance in students' perceptions of fathers' flexible parenting was explained ($F_{7,291} = .817$, $p = .573$, $R^2\Delta = .013$, $R^2 = .019$). None of the interaction terms was a statistically significant predictor of perceptions of fathers' authoritarian parenting.

Follow-up analyses: Parenting styles by cognitive ability. To further examine the relationship between parenting styles and cognitive ability that emerged regarding the father permissive, mother permissive, and mother authoritarian scales, we conducted *t* tests comparing the average scores on the parenting styles scales for students of different levels of cognitive abilities (high, above average, and average). The average standard score on the CogAT-6 was 122.36, with a standard deviation of 10.36. The scores ranged from 81 to 150. Only seven students scored below 100; the fact that some students scored within the average range on this test, despite being identified as gifted, may be an artifact of our use of only the verbal scale of the CogAT-6 as a measure of general reasoning ability. Based on this score, we divided the sample into three groups: those categorized as *high* were those whose score was at least two standard deviations above the mean score for the normal population (at least 130); *above-average* students were those whose score was between one and two standard deviations above the mean score for the normal population (115-129); and *average* students were those whose score was less than one standard deviation above the mean score for the normal population (less than 115). Of the 332 students with a CogAT-6 score and a score on at least one of the parenting style scales, 84 were classified as high, 182 were classified as above average, and 66 were classified as average.

As shown in Table 4, no statistically significant differences were found between the *high, above average*, and *average* groups on mean scores for Father Permissive, Father Flexible, or Mother Flexible, and the effect sizes (Cohen's *d*) for group differences on those scales were below 0.20 (with the exception of the different ratings between high students and average students on Father Permissive where Cohen's $d = 0.25$). An examination of Table 4 highlights children's perceptions of mothers' authoritarian parenting as showing the biggest different between cognitive ability groups. Consistently, more cognitively able students rated their mothers as less authoritarian than did their less cognitively able counterparts. There were also some significant differences between ability groups for perceptions of mothers' permissiveness and fathers' authoritarian parenting.

Students in the high group rated their fathers as being statistically less authoritarian than the above-average students, the average students, and the above-average and average students combined rated their fathers (effect sizes ranged from

Table 4. Differences (and Effect Sizes for the Difference) on Parenting Styles Scales by Cognitive Ability Level

Groups being compared	Mperm	Mauth	Mflex	Fperm	Fauth	Fflex
High versus above-average and average	–0.10 (0.17)	–0.31*** (0.45)	0.04 (0.07)	–0.08 (0.12)	–0.25** (0.34)	0.05 (0.10)
High versus above-average	–0.06 (0.11)	–0.25** (0.27)	0.06 (0.11)	–0.05 (0.08)	–0.22* (0.30)	0.06 (0.12)
High versus average	–0.22* (0.37)	–0.48*** (0.68)	–0.01 (0.02)	–0.14 (0.25)	–0.33** (0.46)	0.01 (0.02)
High and above-average versus average	–0.18* (0.30)	–0.31** (0.43)	–0.05 (0.09)	–0.11 (0.19)	–0.18 (0.24)	–0.03 (0.05)
Above-average versus average	–0.16 (0.26)	–0.22* (0.31)	–0.07 (0.13)	–0.09 (0.15)	–0.11 (0.14)	–0.05 (0.09)

Note. Mperm = Mother Permissive; Mauth = Mother Authoritarian; Mflex = Mother Flexible; Fperm = Father Permissive; Fauth = Father Authoritarian; Fflex = Father Flexible. The value given is the difference (first group minus second group), and the value in parentheses is the effect size (Cohen's *d*).
*$p < .05$. **$p < .01$. ***$p < .001$.

0.30 to 0.46). However, there were no statistically significant differences when comparing the above-average students with the average students ($d = 0.14$) or when combining the high and above-average students and comparing them to the average students ($d = 0.24$).

Although there were no statistically significant differences between high and above-average students in terms of their ratings of their mothers' permissiveness (and the effect size of this difference was small, $d = 0.17$), high students and high and above-average students combined rated their mothers statistically significantly lower on permissiveness than average students did, with effect sizes of 0.37 and 0.30, respectively. However, there were no differences in average ratings for above-average and average students or above-average and high students ($d = 0.26$ and 0.11, respectively). Finally, for all comparisons, the group with higher cognitive ability consistently rated their mothers' parenting style as less authoritarian, with effect sizes ranging from 0.27 to 0.68.

Discussion

In this study, we examined perceptions of parenting styles among a sample of gifted students. Three main findings emerged. First, factor analyses provided support for the use of the PAQ with gifted populations, with the removal of three items from the permissive factor and three items from the authoritative factor. Second, findings from regression analyses as well as examinations of mean differences by cognitive ability level were consonant with earlier studies suggesting that parents of more cognitively able students were more likely to employ a flexible parenting style, at least as perceived by their children. Finally, again consonant with earlier studies, age, sex, and race were associated with parenting styles as reported by this group of identified gifted students. Each of these findings will be discussed in turn.

The fact that the structure of the PAQ was tenable with a sample of gifted students at a summer enrichment program is promising for future research with gifted students. Previous work examining parenting styles of parents of gifted children have employed this measure (e.g., Dwairy, 2004), so it is helpful to know that the factor structure is defensible with only slight modifications in interpreting data on gifted populations.

The findings from the present study suggest that more cognitively able students were more likely to have parents whom they perceive as showing flexible or authoritative parenting practices. Specifically, we found that students with lower cognitive ability scores were more likely to rate their mothers and fathers higher in permissiveness and authoritarian parenting styles than students with higher cognitive ability scores. In addition, our tests of mean differences among different levels of cognitive ability (i.e., high, above average, and average) showed that authoritarian parenting was less likely to be associated with the "high" cognitive ability students. These findings are consistent with research by Abelman (1991), Cornell and Grossberg (1987), and Dwairy (2004), who found that gifted students are more likely than their nonidentified peers to report their parents' parenting styles as authoritative. In addition, these results align conceptually with consistent evidence that children whose parents display authoritative parenting have better academic achievement than their peers whose parents are authoritarian or permissive (Dornbusch et al., 1987). It may be that authoritative parenting, recognized as the parenting style linked to more favorable outcomes, promotes cognitive development in children. Indeed, warmth and sensitivity, combined with high expectations, may be successful in fostering cognitive growth because children in such an environment feel free to question and explore, thus expanding their horizons and challenging their and others' thinking. On the other hand, it could be that children who are more cognitively able *elicit* authoritative parenting because their behavior suggests they are capable of handling more independence and responsibility. Indeed, this is congruent with work by Moss (1990) and Morrissey (2011) showing that mothers' interactions with their gifted children are responsive to the cognitive levels displayed by their children. Further qualitative investigation of parental reasoning may provide insight into the directionality of the influence.

Congruent with research on parenting styles with nonidentified populations, age, sex, and race were predictors of

perceptions of parenting in this sample of gifted students. First, younger students were more likely than older students to rate their parents' behavior as permissive. This age difference in perceptions of parental permissiveness may stem from the fact that older students (i.e., adolescents) may bristle at constraints placed by parents that, a year or two earlier, may not have been so frustrating (Smetana et al., 2005). Research with African American adolescents and their mothers suggests that, although both recognize the increasing importance of relinquishing control over personal matters as adolescents mature, mothers endorsed this less than their children (Smetana et al., 2005). However, longitudinal research with identified gifted populations is needed to determine the extent to which perceptions of parenting change with age.

Second, girls were more likely to rate both their mothers and their fathers as more authoritarian. This is consistent with work by Jones-Sanpei, Day, and Holmes (2009), who found that girls were less likely than boys to perceive their mothers' (girls = 40%, boys = 45%) and fathers' (girls = 35%, boys = 43%) parenting as authoritative. It also aligns with findings summarized elsewhere suggesting that girls perceive their fathers as somewhat distant figures of authority, whereas boys view their fathers as potential confidants and friends (Holmbeck, Paikoff, & Brooks-Gunn, 1995). Yet other researchers have found that girls report more authoritative parenting from mothers than fathers (Conrade & Ho, 2001), and parents of preschoolers report more authoritative parenting of girls and more authoritarian parenting of boys (Russell et al., 1998). Thus, the fact that girls in the current study were more likely than boys to rate both mothers and fathers as more authoritarian warrants further research with gifted students.

Finally, non-White children were more likely to rate their mothers as authoritarian. This finding contrasts with results from Jones-Sanpei et al. (2009) where a greater percentage of African American (46%) than White (41%) youth perceived their mothers as authoritative. However, in their review of the literature on connections between parenting styles and academic achievement, Brown and Iyengar (2008) noted that Asian parents tend to be more authoritarian than White parents, a conclusion that is congruent with findings presented here. Generally, the extant literature suggests parenting styles differ by race (Arredondo et al., 2006; Chao, 1994; Dornbusch et al., 1987; Lamborn et al., 1996), and this finding provides further support for this notion. In a study of Latino parenting styles, Rodriguez, Donovick, and Crowley (2009) found that Latino parents are more likely to enact a "protective" parenting style, which is characterized by high levels of warmth and demandingness (indicative of authoritative parenting) as well as low levels of autonomy granting (indicative of authoritarian parenting) than any other style of parenting. This suggests that not only may there be differences in the prevalence of parenting styles but that there may also be differences in the *composition* of parenting styles between racial or ethnic groups.

Limitations

Although the results of this study warrant consideration, several limitations must be kept in mind when interpreting them. We address here our measure of students' general reasoning ability, our measures of parenting style, and the proportion of diverse students of different ethnicities. We used only the Verbal Battery of the CogAT-6 to estimate students' general reasoning ability. Although verbal ability and general reasoning ability tend to be highly correlated, this may have resulted in bias against some students, particularly those with strong mathematical reasoning and general reasoning abilities but with deficits in verbal reasoning.

This study focused on student-perceived parenting styles. However, future research should include parent-report of parenting styles and observations of parenting styles to corroborate and validate students' perceptions of parenting styles. Having multiple measures of parenting styles would allow researchers to investigate differences in how students perceive their parents' parenting style as well as parents' actual or self-reported parenting styles based on cognitive ability. Finally, regarding ethnic and racial differences, we could only examine differences between White and non-White students. Greater representation of minority students is needed, given that different ethnic and racial backgrounds, such as Asian, Hispanic, and African American, may suggest different cultural backgrounds as well as parenting styles. Indeed, the fact that only small amounts of variance were explained in our models may stem from this sample's limited diversity. On a related note, we had a relatively low response rate (35%) for participation in this study, and this may have introduced unknown bias to our findings. For example, those willing to participate may represent students and parents with more positive perspectives on their relationships and parenting practices than those families who did not opt to participate.

Implications

Despite these limitations, findings from this study have implications for research and practice with gifted samples. First, our factor analytic results indicate that the PAQ, with minor modifications, produces valid and reliable scores to measure gifted children's perceptions of their parents' parenting styles. Thus, researchers interested in examining parenting styles with gifted students may be more informed when using the PAQ. Second, the finding that a more authoritative (i.e., flexible) parenting style is associated with higher cognitive ability scores suggests that parents who hold high expectations while displaying warmth and sensitivity may promote better cognitive outcomes than parents who are more permissive, display less warmth, or both. Of course, findings from this study do not point to the direction of these effects, so it could also be that parents are more likely to display authoritative parenting toward more cognitively able children. Or, it could be that students with higher

cognitive ability scores perceive their parents as more authoritative because of some bias that comes with superior verbal ability. There are also other explanations that were not examined in this study, such as individual differences in motivation and mindset (i.e., growth or fixed). Work by Dweck and colleagues (Dweck, 1986; Elliott & Dweck, 1988) suggests motivation may play a critical role in children's academic achievement, and future work should include consideration of such factors. Nevertheless, this study's results provide further support for the notion that authoritative parenting promotes positive outcomes for children. Third, some results regarding sex are incongruent with other research conducted with nonidentified samples and with parent-report of parenting styles. Thus, this work should be extended by examining parenting styles among gifted students using both parent- and child-report. Finally, the limited ethnic and racial diversity of the current sample points to the importance of investigating cultural differences in parenting styles within gifted populations.

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References

Abelman, R. (1991). Parental communication style and its influence on exceptional children. *Roeper Review*, *14*, 23-27.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Amato, P. R., & Fowler, F. (2002). Parenting practices, child adjustment, and family diversity. *Journal of Marriage and Family*, *64*, 703-716.

Arredondo, E. M., Elder, J. P., Ayala, G. X., Campbell, N., Baquero, B., & Duerksen, S. (2006). Is parenting style related to children's healthy eating and physical activity in Latino families? *Health Education Research*, *21*, 862-871.

Baumrind, D. (1973). The development of instrumental competence through socialization. In A. D. Pick (Ed.), *Minnesota symposium on child psychology* (Vol. 7, pp. 3-46). Minneapolis: University of Minnesota Press.

Bornstein, M. H., Hendricks, C., Haynes, O. M., & Painter, K. M. (2007). Maternal sensitivity and child responsiveness: Associations with social context, maternal characteristics, and child characteristics in a multivariate analysis. *Infancy*, *2*, 189-223.

Brown, L., & Iyengar, S. (2008). Parenting styles: The impact on student achievement. *Marriage & Family Review*, *43*, 14-38.

Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality Assessment*, *57*, 110-119.

Buri, J. R., Louiselle, P. A., Misukanis, T. M., & Mueller, R. A. (1988). Effects of parental authoritarianism and authoritativeness of self-esteem. *Personality and Social Psychology Bulletin*, *14*, 271-282.

Chao, R. K. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development*, *65*, 1111-1119.

Conrade, G., & Ho, R. (2001). Differential parenting styles for fathers and mothers: Differential treatment for sons and daughters. *Australian Journal of Psychology*, *53*, 29-45.

Cornell, D., & Grossberg, I. (1987). Family environment and personality adjustment in gifted program children. *Gifted Child Quarterly*, *31*, 59-64.

Darling, N. (1999). *Parenting style and its correlates* (ERIC Digest No. 427896). Champaign: ERIC Clearinghouse on Elementary and Early Childhood Education, University of Illinois.

DiPerna, J. C. (2005). Review of the Cognitive Abilities Test, Multilevel Edition, Form 6. In R. A. Spies & B. S. Plake (Eds.), *The sixteenth mental measurements yearbook* (pp. 228-234). Lincoln: University of Nebraska. Retrieved from http://web.ebscohost.com/ehost/detail?vid=3&hid=13&sid=97e2768e-5e35-461e-b207-b4cefe2508c2%40sessionmgr12&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=loh&AN=16073114

Dornbusch, S., Ritter, P., Leiderman, P., Roberts, D., & Fraleigh, M. (1987). The relation of parenting style to adolescent school performance. *Child Development*, *58*, 1244-1257.

Dwairy, M. (2004). Parenting styles and mental health of Arab gifted adolescents. *Gifted Child Quarterly*, *48*, 275-286.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*, 1040-1048.

Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5-12.

Engels, R., Dekovic, M., & Meeus, W. (2002). Parenting practices, social skills and peer relationships in adolescence. *Social Behavior and Personality: An International Journal*, *30*, 3-17.

Forehand, R., & Kotchick, B. A. (1996). Cultural diversity: A wake-up call for parent training. *Behavior Therapy*, *27*, 187-206.

Garcia-Coll, C. T., Meyer, E. C., & Brillon, L. (1995). Ethnic and minority parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 2. Biology and ecology of parenting* (pp. 189-210). Mahwah, NJ: Erlbaum.

Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and the Family*, *61*, 574-587.

Grusec, J. E. (2002). Parenting socialization and children's acquisition of values. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 5. Practical issues in parenting* (pp. 143-167). Mahwah, NJ: Erlbaum.

Holmbeck, G. N., Paikoff, R. L., & Brooks-Gunn, J. (1995). Parenting adolescents. In M. H. Bornstein (Ed), *Handbook of parenting: Vol. 1. Children and parenting* (pp. 91-118). Hillsdale, NJ: Erlbaum.

Jones-Sanpei, H. A., Day, R. D., & Holmes, E. K. (2009). Core family process measures in the NLSY97: Variation by gender, race, income, and family structure. *Marriage and Family Review*, *45*, 140-167.

Karnes, M. B., Shwedel, M. A., & Steinberg, D. (1984). Styles of parenting among parents of young gifted children. *Roeper Review*, *6*, 232-235.

Lamborn, S. D., Dornbusch, S. M., & Steinberg, L. (1996). Ethnicity and community context as moderators of the relations between family decision making and adolescent adjustment. *Child Development*, *67*, 283-301.

Lohman, D. F., & Hagen, E. (2000). *Cognitive Abilities Test (CogAT), Form 6*. Itasca, IL: Riverside.

Marsiglio, W., Amato, P., Day, R., & Lamb, M. (2000). Scholarship on fatherhood in the 1990s and beyond. *Journal of Marriage and the Family*, *62*, 1173-1191.

Morrissey, A.-M. (2011). Maternal scaffolding of analogy and metacognition in the early pretense of gifted children. *Exceptional Children*, 77, 351-366.

Moss, E. (1990). Social interaction and metacognitive development in gifted preschoolers. *Gifted Child Quarterly*, 34, 16-20.

Muthén, L., & Muthén, B. (1998-2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.

Pettit, G. S., Bates, J. E., & Dodge, K. A. (1997). Supportive parenting, ecological context, and children's adjustment: A seven year longitudinal study. *Child Development*, *68*, 908-923.

Rimm, S., & Lowe, B. (1988). Family environments of underachieving gifted students. *Gifted Child Quarterly*, *32*, 353-359.

Robinson, N. M., Reis, S. M., Neihart, M., & Moon, S. M. (2002). Social and emotional issues: What have we learned and what should we do now? In M. Neihart, S. M. Reis, N. M. Robinson, & S. M. Moon (Eds.), *The social and emotional development of gifted children: What do we know?* (pp. 93-102). Waco, TX: Prufrock Press.

Rodriguez, M. M. D., Donovick, M. R., & Crowley, S. L. (2009). Parenting styles in a cultural context: Observations of "proactive parenting" in first-generation Latinos. *Family Process*, *48*, 195-210.

Russell, A., Aloa, V., Feder, T., Glover, A., Miller, H., & Palmer, G. (1998). Sex-based differences in parenting styles in a sample with preschool children. *Australian Journal of Psychology*, *50*, 89-99.

Simons, L., & Conger, R. (2007). Linking mother-father differences in parenting to a typology of family parenting styles and adolescent outcomes. *Journal of Family Issues*, *28*, 212-241.

Slicker, E. K. (1998). Relationship of parenting style to behavioral adjustment in graduating high school seniors. *Journal of Youth and Adolescence*, *27*, 345-372.

Smetana, J. (1995). Parenting styles and conceptions of parental authority during adolescence. *Child Development*, *66*, 299-316.

Smetana, J., Crean, H. F., & Campione-Barr, N. (2005). Adolescents' and parents' changing conceptions of parental authority. *New Directions for Child and Adolescent Development*, *108*, 31-46.

Snowden, P., & Christian, L. (1999). Parenting the young gifted child: Supportive behaviors. *Roeper Review*, *21*, 215-222.

Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development*, *63*, 1266-1281.

van Bakel, H. J. A., & Riksen-Walraven, J. M. (2002). Parenting and development of one-year-olds: Links with parental, contextual, and child characteristics. *Child Development*, *73*, 256-273.

Weiss, L. H., & Schwarz, J. C. (1996). The relationship between parenting types and older adolescents' personality, academic achievement, adjustment, and substance use. *Child Development*, *67*, 2101-2114.

Winsler, A., Madigan, A. L., & Aquilino, S. A. (2005). Correspondence between maternal and paternal parenting styles in early childhood. *Early Childhood Research Quarterly*, *20*, 1-12.

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