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**Putting it in a social context: High ability students' motivations to succeed.**

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Goals of administrators, teachers, and parents are to help students maintain high academic grades. Are these the same goals for which the students are striving? As children move toward the adolescent years, the salience of peer relationships and the desire for "popularity" increases (Brown, 1990). It is during this period that students may feel a conflict between academic and social demands, and that conflict may be particularly pronounced for high-ability students. Researchers have shown that being recognized as a "smart" kid may work against one's reputation as a "cool" kid (Coleman, 1961; Anderson, 1989). Although this notion has been mainly applied to the underachievement of minority students, the same principles may apply to the subset of high ability students.

Eccles and her colleagues have highlighted the complexity of the achievement choices gifted students make within the context of social expectations and their own goals (Eccles & Harold, 1992), highlighting the importance of gender and parental roles in students' choices. Parental socialization clearly impacts the motivations, educational aspirations, and athletic endeavors of their gifted children (Eccles & Harold, 1992). Although the importance of parents' and students' academic goals is clear, those goals have seldom been examined within the context of social and emotional attitudes. This study presented in this paper focused on the academic, family, and social contexts under which high ability students achieve. One goal of the research was to examine how students with high IQ scores compare to average ability students as they experience social, cognitive, and emotional developmental shifts during adolescence. A second goal of this study was to understand parental attitudes about the importance of social goals that are related to differences in high and average ability students' successful academic and social development.

*Method:* The sample consisted of 488 students who took part in a cross-sectional study and 150 of those students who participated in a 4-wave longitudinal study. In addition, data were gathered from 261 of the mothers and fathers of the students. At the first wave of data collection (cross sectional sample) students were in the first, second, and fourth grades. All students were participants in a larger, longitudinal study of child and adolescent development. Students and parents responded to questionnaires concerning their attitudes about academic and social issues in addition to a wide variety of other topics. IQ tests were given at the beginning of the study.

Students were labeled 'High' or 'Average Ability' based on the IQ sample mean (mn= 111.30). Mothers were classified as those who do or do not promote a "social" environment based on their responses to a 7-point, 4 item scale which included items such as "I encourage my child to give parties for her/his friends, and I encourage my child to learn to make himself/herself attractive." All outcome variables (i.e. depression, self-esteem, anxiety, social worry) are based on valid scales (alphas > .57), each with at least 4 items.

*Results.* A 2 (sex) x 2 (ability) x 2 (child's report of liking school) x 2 (child characteristic) repeated measures ANOVA was used to model the outcomes and changes of high ability students in contrast to average ability students at wave 5 of data collection. High Ability students were compared to Average Ability students on several psychological, social, and academic factors. Average students reported significantly greater increases in their self-esteem between middle school and high school than did the High Ability students,  $F(1, 463) = 6.51, p < .011$ , and the High Ability students reported significantly higher depression scores in high school,  $F(1, 487) = 9.48, p < .002$ . In addition, self-consciousness did not decrease over time for the High Ability students as it did for the Average Ability students,  $F(1, 150) = 6.29, p < .013$ . Therefore, while their self-esteem remains low and depression increases the High Ability students are remaining self-conscious about themselves. This may, in turn, lead to greater social comparison among the high ability sample. High Ability boys, in contrast to girls and Average Ability students, reported a significantly greater likelihood to act less smart in order to attain popularity,  $F(1, 241) = 6.28, p < .01$ . These findings indicate that the psychological adaptation of the High Ability student is different than that of the average student. As the High Ability students entered the early years of high school, and a world of peer orientation, their emotional and psychological reactions indicate that they may experience greater tumult than the average student.

This is not to suggest, however, that high ability students in this sample had trouble in the social world. The High Ability students reported greater ability to make friends than Average Ability students,  $F(1, 468) = 7.09, p < .008$ , and they reported higher social affect than Average Ability students,  $F(1, 488) = 6.09, p < .014$ . These findings suggest that it is not a simple and direct correlation between having a high IQ and social relationships that affects the progress of a highly able student.

The home environment and parent behavior has a considerable impact on the development of children's behaviors. Results from these analyses suggest that mothers may create environments conducive to the healthy development of their highly able children. High Ability students reported more social worry than the Average Ability students. For female students with high IQ scores their social worries increased significantly when they were daughters of mothers who strongly promoted social relationships. High Ability boys, however, reported increased social worries when they did not have a "social" mother,  $F(1, 241) = 5.90, p < .02$ . Academic worries tended to increase for High Ability students when their mothers reported a strong interest in developing social children,  $F(1, 241) = 3.73, p < .055$ . In addition, reports of loneliness

were higher for High Ability students who live in a non-social home,  $F(1, 240) = 4.67$ ,  $p < .03$ . These findings indicate that high IQ students benefit from living in a home where social relationships are modeled and deemed important. During the formative years, it may be beneficial for a highly able student to learn social skills at home, while focusing on academics at school. Upon entering high school, when greater social comparison takes place, these students may find that they are socially adequate and may not suffer as much from social worries and anxieties.

It is clear from these data that high ability children have more emotional concerns as they mature than their average ability peers, and that these vary depending on gender and mothers' promotion of social goals. High school academic and social achievement will be examined in addition to the attitudinal variables presented here. Fathers' reports of social importance and contextual classroom variables will be included as well.

"My Parents Are Too Strict":

Relations Between Parenting Practices and Adolescent Decision Autonomy

Previous research has indicated that early adolescence is the period during which parents begin to give their children more autonomy in decision making (Grotevant & Cooper, 1986, Hill & Holmbeck, 1987; Jacobs, Bennett, & Flanagan, 1993; Steinberg & Silverberg, 1986) and less monitoring (Jacobs & Osgood, 1994). Although greater autonomy has been related to negative outcomes such as delinquency (e.g., Feldman & Wood, 1994; Patterson, DeBaryshe, & Ramsey, 1989), it also has been related to positive outcomes, such as independence and identity (e.g., Allen, Hauser, Bell, & O'Connor, 1994). It is likely that parents have different reasons for giving adolescents more decision autonomy and that they provide different levels of monitoring for the outcomes of those decisions. For example, some adolescents may receive greater autonomy and less monitoring because their parents believe they are responsible, while other adolescents may receive the same treatment because their parents believe they are wild and have given up trying to control them. In addition, the two groups of adolescents may perceive the autonomy, monitoring, and their relationships with their parents quite differently. The goals of the current, longitudinal study were: 1) to examine relations between parents' perceptions of their children during middle childhood and the levels of autonomy and monitoring given to the same children during early adolescence and 2) to examine early adolescents' perceptions of the autonomy and monitoring they are receiving in relation to parent reports and decision outcomes such as achievement and deviance.

Data reported here were collected from 261 children and their parents as part of a larger, longitudinal study of childhood and early adolescence in the upper Midwest. Parents responded to questionnaires about their perceptions of their children and family decision making when the children were in the fifth grade; these responses were related to adolescents' responses about perceived decision autonomy, monitoring, and relationships with their parents when they were in the eighth grade.

Regression analyses indicated that mothers' perceptions of their children's personality characteristics in the fifth grade were significantly related to how much they trusted the child ( $R^2 = .44$ ) and how much influence they believed they could have on the child as an adolescent ( $R^2 = .32$ ). Trust was positively related to perceptions of the child as a perfectionist, but negatively related to perceptions of the child as disruptive and unaware of others' feelings. Future control was

positively related to perceptions of the child as a perfectionist and as prosocial. Results for the fathers were similar.

As predicted, these parent perceptions of children during middle childhood and their reports of the child's participation in family decision family were related to their children's reports of decision-making autonomy ( $R^2 = .11$ ), parental monitoring ( $R^2 = .23$ ), and parent strictness ( $R^2 = .17$ ) during early adolescence. Interestingly, greater parental trust, parental perceptions of control, and adolescent participation in family decision making at younger ages were positively related to parental monitoring (meaning more monitoring in adolescence), but negatively related to parent strictness and decision-making autonomy. This suggests that parents who trust their children and feel able to control them and include them in decision making at younger ages have adolescents who report more monitoring, but less strictness and decision autonomy. In addition, adolescents' perceptions of parental monitoring and strictness are related to feeling of supported by their parents ( $R^2 = .24$ ) and to their involvement in problem behaviors ( $R^2 = .22$ ). Parental monitoring is positively related to feeling supported by parents, but strictness is negatively related. The opposite pattern is found for problem behaviors, suggesting that monitoring (knowing your adolescent's whereabouts and friends) is related to positive outcomes, while strictness (having a lot of rules and asking a lot of questions) is seen as intrusive and is related to more negative outcomes. (The above statistics are all for analyses with mothers' data, but similar patterns hold for fathers).

The results of this study suggest that parents early perceptions of their child's personality characteristics are related to differentiated parent practices related to decision making and autonomy, that are, in turn, related to adolescents' perceptions of the decision autonomy, monitoring, and strictness they experience. It is clear that there is a fine line between monitoring adolescents and being too strict. This distinction is related to different outcomes for adolescents and appears to begin earlier in the parent-child relationship. Parents who believe that their children are hard to control appear to give less decision autonomy and enact strict rules, but their adolescents report more involvement in problem behaviors and less support from their parents.

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**Explaining the Decrease in Adolescents'  
Math and Sports Ability and Interest:  
An Example Using Hierarchical Linear Modeling**

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Previous research has found that children's ratings of their achievement abilities decline as children get older; however, most studies have considered only mean level change, using cross-sectional designs (e.g., Eccles et al., 1993; Marsh, 1989; Nicholls, 1979) or longitudinal designs (e.g., Wigfield, et al., in press). Despite researchers' interests in how and why children's achievement beliefs change over time, few have actually assessed change or included variables that may be related to change in their models. Hierarchical Linear Modeling (HLM; Bryk, Raudenbush, & Congdon, 1996) is especially well suited to considering such questions because it allows an examination of both change and covariates related to change over time in the same model.

Research on achievement competence has generally shown that self-perceptions of competence predict achievement performance, even after goals, effort, self-esteem, and previous performance are controlled (see Stipek & Mac Iver, 1989 for review). Eccles and colleagues (see Eccles-Parsons et al., 1982; Eccles-Parsons et al., 1983) developed an achievement choice model to explain these relationships that includes task values, parents' beliefs about their children; and children's characteristics (such as gender and age), as well as self-perceptions of competence. Numerous studies, using that model, have shown that subjective task values (interest, importance, and utility) predict actual achievement choices (e.g., Eccles & Harold, 1991; Feather, 1988; Meece, Wigfield, & Eccles, 1990; Wigfield et al., in press); that parents' perceptions of their children's abilities influence their children's self-perceptions and achievement (Eccles, Jacobs, & Harold, 1990; Jacobs & Eccles, 1991; Yee & Eccles, 1988); and that children's gender impacts both parents' and children's perceptions of the child's competence (Eccles et al., 1993; Eccles & Harold, 1990; Jacobs & Eccles, 1991). The study reported here expands the previous work based on the Eccles framework, by using HLM to examine changes in 4<sup>th</sup> to 10<sup>th</sup> grade children's ratings of their ability in, and the importance of, mathematics and sports while considering the roles of parents' perceptions of their child's abilities and the child's gender in those changes over time.

This study had two goals. First, Hierarchical Linear Modeling (HLM; Bryk, Raudenbush, & Congdon, 1996), was used to model four growth trajectories for students in 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 10<sup>th</sup> grade: math self-concept of ability, math interest, sports self-concept of ability, and sports interest. HLM, a methodology for fitting growth curve models, is an excellent tool for examining not only what variables were related to the student's level of competence or interest, but also what variables were related to change over time in these constructs. Mean growth trajectories were estimated, represented by the average initial (4<sup>th</sup> grade) status and the average growth rate. In addition, the amount of interindividual variation

about the mean trajectory was estimated. The second goal of this project was to add independent variables to the models in order to explain variation around the mean growth curve. This technique allows us to examine the effect of an exogenous variable, and determine if the effect has already occurred by the first time of measurement (an effect on 4<sup>th</sup> grade status) or has occurred during the longitudinal study (an effect on the growth rate). Child's gender, mother's perception of the child's ability, and father's perception of the child's ability were included in the models as independent variables.

This study was part of an ongoing longitudinal study investigating the development of children's self-perceptions of ability and interest in four middle class school districts in the upper Midwest. The subset of data analyzed in this study were collected from subjects in 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 10<sup>th</sup> grade, and also from the subjects' mothers and fathers. HLM provides the capability of handling longitudinal data which is not equally spaced across time. Approximately 260 children from a middle class European-American background participated in the first wave, and as many waves as possible from each subject were included in the analyses. Data were collected on items making up the following 3-6 item scales: math self-concept of ability, math interest, sports self-concept of ability, and sports interest (all alphas > .65). Linear growth in these four constructs was modeled over time using HLM. Data was also collected on child's gender and on the mothers' and fathers' perceptions of the child's ability in sports and math. Introducing these variables into the models allows us to estimate the effect of gender, mother's perceptions of the child's ability, and father's perception of the child's ability on the child's development.

Results show that, as predicted, self-concept of math ability, math interest, self-concept of sports ability, and sports interest all decline between 4<sup>th</sup> and 10<sup>th</sup> grade. Interestingly, child's gender is an important predictor of students' self-concept of math ability and sports ability in 4<sup>th</sup> grade, but does not predict change in these constructs over time. In other words, the gender effect has already occurred by 4<sup>th</sup> grade; boys have higher belief of ability in both domains in 4<sup>th</sup> grade but the steepness of the slopes for males and females are similar between 4<sup>th</sup> and 10<sup>th</sup> grades. For example, the average growth curve for boys' self-perception of sports ability (based on a continuous outcome variable ranging from 1 to 7) is  $ABILITY=6.22-.09(YEAR)$ . This indicates that the average level of ability reported in 4<sup>th</sup> grade, corrected for measurement error, is 6.22 and each subsequent year in school this rating drops an average of .09 units. For girls the average growth curve is  $ABILITY=5.27-.08(YEAR)$ . Girls have a significantly lower intercept (4<sup>th</sup> grade status), but similar rate of change. Mothers' perceptions of the child's math ability is related to 4<sup>th</sup> graders' report of math ability but not rate of change. Mothers' perception of the child's sports ability is related to both 4<sup>th</sup> grade level of sports ability and growth rate. This means that mothers who rate their child's sports ability higher in 4<sup>th</sup> grade have children who report higher initial level of sports ability and decline less in sports ability over time. (These findings are for mothers, but fathers' perceptions produced similar results.)

These results and the use of this analysis strategy are important for researchers in this area because they support previous cross-sectional findings of the decline in interest and ability perceptions for a larger age-range. In addition, using this analysis strategy allows us to test previous speculations about the effects of independent variables (such as parent



perceptions and gender) over time. The results of this study suggest that gender differences in these constructs have already become established by 4<sup>th</sup> grade. By this time, boys are more interested in sports than girls, and rate their abilities in math and sports higher than girls. Thus, the discrepancies between girls' and boys' perceptions are not increasing with age as some have suggested, but as all children's decline over time, girls retain consistently lower perceptions than boys into adolescence. The results also indicate that mothers' perceptions of their children's abilities affect children's self-concept of sports ability over time, but not children's self-concept of math ability over time. These effects are important for educators and researchers because they suggest that the greatest impacts on self perception of ability and interest occur prior to 4<sup>th</sup> grade, highlighting the importance of that time period.

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Lessons Learned at Home: Relations  
 Between Parents' Child-rearing Goals  
 and Children's Achievement Goals  
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A large body of literature has established the relation between general patterns of child rearing and children's achievement motivation (e.g., Goodnow & Collins, 1990 or Eccles, 1992 for review). Most studies show that parents' general beliefs about the value of achievement and their provision of a warm and supportive environment are related to higher achievement motivation and self-perceptions of abilities in their children. Grolnick and Ryan (1993) suggest that two of the important components of the child-rearing climate are support for autonomous behavior and structure; however, the amount of decision autonomy and the structure provided are likely to change as children mature and enter adolescence. Previous studies have shown that parents begin to give their children more autonomy (Grotevant & Cooper, 1986, Hill & Holmbeck, 1987; Jacobs, Bennett, & Flanagan, 1993; Steinberg & Silverberg, 1986) and provide less structure and monitoring (Jacobs & Osgood, 1994) as they get older.

The amount of structure and autonomy is likely to differ among parents as they act on their general beliefs about child-rearing and on their specific beliefs about their child's needs. As suggested by Eccles' (e.g., 1992) parent socialization model, both general child-rearing beliefs and specific beliefs about the child influence parents' attitudes and behaviors toward their children, which ultimately influence their children's achievement beliefs (see Eccles, Jacobs, & Harold, 1990; Jacobs & Eccles, 1991 for empirical evidence of the model related to gender roles). The goals of the current, longitudinal study were: 1) to examine relations between parents' perceptions of their children during middle childhood and the levels of autonomy and monitoring given to the same children during early adolescence and 2) to examine early adolescents' perceptions of the autonomy and monitoring they are receiving in relation to their achievement and self-perceptions of achievement.

Data reported here were collected from 261 children and their parents as part of a larger, longitudinal study in four primarily white, middle class school districts in suburban communities in the upper Midwest. Parents responded to questionnaires about their perceptions of their children and family decision making when the children were in the fifth grade; these responses were related to adolescents' responses about perceived decision autonomy, monitoring, and achievement when they were in the eighth grade. All parent and child constructs were measured with 3-6 item scales; each with alpha > .65. Achievement was measured with teacher ratings.

Regression analyses indicated that mothers' perceptions of their children's personality characteristics in the fifth grade were significantly related to how much they trusted the child ( $R^2 = .44$ ) and how much influence they believed they could have on the

child as an adolescent ( $R^2 = .32$ ). Trust was positively related to perceptions of the child as a perfectionist, but negatively related to perceptions of the child as disruptive and unaware of others' feelings. Future control was positively related to perceptions of the child as a perfectionist and as prosocial. Results for the fathers were similar.

As predicted, these parent perceptions of children during middle childhood and their reports of the child's participation in family decision making were related to their children's reports of decision autonomy ( $R^2 = .11$ ), parental monitoring ( $R^2 = .23$ ), and achievement ( $R^2 = .17$ ) during early adolescence. Interestingly, greater parental trust, parental perceptions of control, and adolescent participation in family decision making at younger ages were positively related to parental monitoring (meaning more monitoring in adolescence) and achievement, but negatively related to perceptions of parent strictness. This suggests that parents who trust their children and feel able to control them and include them in decision making at younger ages have adolescents who report more monitoring and have higher achievement, but see their parents as less strict. In addition, adolescents' perceptions of parental monitoring and strictness are related to feeling supported by their parents ( $R^2 = .24$ ) and to their involvement in school and perceptions of achievement ( $R^2 = .16$ ). Parental monitoring is positively related to feeling supported by parents and achievement, but strictness is negatively related, suggesting that monitoring (knowing your adolescent's whereabouts and friends) is related to positive outcomes, while strictness (having a lot of rules and asking a lot of questions) is seen as intrusive. (The above statistics are all for analyses with mothers' data, but similar patterns hold for fathers).

The results of this study suggest that parents' specific beliefs about their child as well as their general beliefs about the value of autonomy and monitoring are related to differentiated parent practices related to decision making and autonomy, that are, in turn, related to adolescents' achievement, involvement in school, and their perceptions of the decision autonomy, monitoring, and strictness they experience. It is clear that there is a fine line between monitoring adolescents and being too strict. This distinction is related to different outcomes for adolescents and appears to begin earlier in the parent-child relationship. Parents who believe that their children are hard to control appear to give less decision autonomy and enact strict rules, but their adolescents report less involvement in school, less academic achievement, and less support from their parents.

These findings are important for educators and researchers because they underscore the importance of parents' general and child-specific beliefs for our understanding of how learners come to achievement settings. Although most parents will say that they value education and that they want their children to succeed in school, we may need to look more closely at what other child-rearing goals they hold, and at how their perceptions of their own children are related to the way they structure the environment. Some views may be more consistent with academic success than others. When parents' child-rearing goals are inconsistent with the values children encounter at school (for example, little monitoring or structure, but high autonomy), children may have a difficult time becoming successful learners.