# DOES AUTONOMY SUPPORT HAVE DIFFERENTIAL EFFECTS ON CHILDREN'S SOCIAL COMPETENCE AS A FUNCTION OF EARLY DYSREGULATORY RISK—AND DO THESE RELATIONSHIPS DIFFER ACROSS RACIAL GROUPS?

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ASTRACT

DOES AUTONOMY SUPPORT HAVE DIFFERENTIAL EFFECTS ON CHILDREN'S SOCIAL COMPETENCE AS A FUNCTION OF DYSREGULATORY RISK—AND DO THESE RELATIONSHIPS DIFFER ACROSS RACIAL GROUPS?
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The expression of parental autonomy support and its effects on social competence may vary according to children's early dysregulatory risk and vary across racial-cultural groupings. In light of inconsistent findings and gaps in the research literature, this study addresses a) whether autonomy support contributes to social competence, after controlling for maternal warmth and positive regard, b) whether any relationship of autonomy support to social competence is moderated by children's early dysregulation, and c) whether the relationship of autonomy support to social competence is moderated by racial self-identification.

This study examined maternal autonomy support in a parent-child discussion task where the dyad was instructed to pick topics about which they disagreed, such as homework, video games, or chores, and to try to make progress in resolving those problems. The participants were 1125 low-income African American and European American fifth graders and their mothers (or in a few cases, grandmothers or another female respondent). An analysis of missing data found significant differences existed between cases without missing data on study variables and cases with missingness on study variables. Therefore, multiple imputation was used to impute missing data. Hierarchical regression analysis found racial self-identification predicted differences in maternal autonomy support, with African American mothers, as hypothesized, less autonomy supportive. Contrary to expectations, regression analyses predicting teacher-reported self-control and cooperation found autonomy support did not predict these measures of social competence and no moderating effects of racial self-identification or early dysregulation were

found. Potential reasons for the lack of relationship of autonomy support to social competencies are discussed. Implications for future research and practice are also discussed.

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# CHAPTER ONE: INTRODUCTION

Preadolescence is a critical juncture in the parent-child relationship when foundations of social competence and problem solving abilities portend successful navigation of transitions through adolescence and early adulthood. As youth often seek and expect increasing autonomy from parents during adolescence (Fuligni, 1998; Kakihara & Tilton-Weaver, 2009; Smetana, 2000, 2002), understanding how parental support of children's autonomy takes place within the parent-child relationship and how those dynamics are related to children's social competence inside and outside of the family is critical (MacDonald & Parke, 1984). A large body of research contends autonomy support is part of a parenting style related to social competencies and generally positive psychosocial adjustment for youth and children (Baumrind, 1991; Dornbusch, Ritter, Mont-Reynaud, & Chen, 1990; Eccles, Early, Fraser, Belansky, & McCarthy, 1997; Laible & Carlo, 2004; Steinberg & Elmen, 1986). However, evidence that autonomy support makes independent contributions social competencies is mixed, with less support for a relationship prior to adolescence (Clark & Ladd, 2000; Hennan, Dornbusch, Herron, & Herting, 1997). The development of social competence is also related to children's self and emotion regulatory abilities (Cassidy, Parke, Butkovsky, & Braungart, 1992; Eisenberg, et al., 1995; Eisenberg, et al., 1997). Additionally, some research indicates differences in self-regulation and child temperament may affect the relationship between parenting and various social-emotional competencies (Blandon, Calkins, & Keane, 2010; Kochanska, 1995; Kochanska & Knaack, 2003; Stoolmiller, 2001). For instance, high maternal control was predictive of less child negativity only for more regulated, less aggressive children (Blandon, et al., 2010). Research does not address whether a similar interaction would be found with parental autonomy support.

Additionally, some evidence suggests that the levels of and the effects of low parental autonomy support vary across racial, ethnic, and cultural groups (Brody & Flor, 1998; Chao, 2001; Fuligni, 1998; Ispa, et al., 2004; Jackson-Newsom, Buchanan, & McDonald, 2008; McGroder, 2000). Hence, this study addresses several known gaps in the literature: first, whether autonomy support has direct effects on social competence in preadolescence; second, whether early dysregulation affects the relationship of autonomy support to social competence; and third, whether the effect of autonomy support on social competence differs across racial groups. In particular, this study examines the relationship of autonomy support in parent-child discussions to fifth grade social competencies, in particular, self-control and cooperation.

## Rationale for the Study

### Importance of Parenting to Social Competence in Low-Income Populations

As parenting is one mediator between the risks of poverty or economic stress and healthy outcomes for children (Barrera et al., 2002; Conger, Ge, Elder, Lorenz, & Simons, 1994; Smith, Prinz, Dumas, & Laughlin, 2001), gaining understanding of how parental autonomy support is linked to social competence for low-income children has implications building resiliency. Social-emotional competencies are associated with resilience (Buckner, Mezzacappa, & Beardslee, 2003; Criss, Pettit, Bates, Dodge, & Lapp, 2002; Eisenberg, et al., 2004; Lengua, 2002; Luthar, 1991) and are substantial predictors of academic adjustment (Durlak, Dymnicki, Taylor, & Weissberg, 2011; Graziano, Reavis, Keane, & Calkins, 2007), and life achievements in adulthood (Goleman, 1997). Unfortunately, early delays in social-emotional competence—which are present in nearly 40% of Head Start children—widen over time (Huffman, Mehlinger, & Kerivan, 2001). Therefore, understanding the interactions of parent factors such as autonomy support and child factors such early dysregulatory risk that can facilitate or undermine the

development of social competence is especially critical in a low-income context. However, these types of studies rarely explicitly examine parental autonomy support in preadolescence. First, the rationale for a focusing on autonomy support as a dimension of parenting will be presented, then a discussion of factors such as dysregulatory risk and race that may moderate the relationship of autonomy support to child competencies in late childhood/preadolescence.

**A Key Transition: Autonomy Support in Preadolescence**

Developmental scholars identify adolescence as a period characterized by a growing desire for autonomy. However, less is known about exactly when how and when this increased motivation for autonomy occurs and if this manifests differently across racial-ethnic groups. Some measure of parental autonomy support is fairly common in studies of very young children and in studies of adolescents, but there is relatively little literature related to parental autonomy support in late childhood or preadolescence. Relatively few studies define and address autonomy support as a distinct parenting behavior during the middle childhood and preadolescent years. (Work by Ryan, Deci, and Grolnick linking autonomy to intrinsic motivation are exceptions. The framework guiding that body of work will be discussed in the literature review.) Clark and Ladd (2000) found autonomy support does not add to the prediction of social competencies in five-year-old children above the effects of positive connection and relationship quality. Does this change by late childhood? If so, does the relationship hold generally across children of varying maturity, risk, and race[1]? For moderately at-risk adolescents, adolescent autonomy is related to increases in social skills, but only when their mothers were securely attached (Allen, Marsh, et

[1] Whenever the term *race* occurs in this document, racial self-identity is the intended meaning. The racial self-identification categories in the larger study, of which this study is a part, included *black*, *white*, *Hispanic.* The currently accepted terms, African American and European American, will be used throughout, per American Psychological Association style guidelines.

al. 2002). Extant research does not answer the questions of at which age and under which conditions autonomy becomes linked to increased social skills.

**Defining and Distinguishing Autonomy Support**

Generally, definitions and uses of autonomy support emphasize either cognitive and emotional autonomy such as allowing or validating the child's unique emotions and perspectives, or behavioral autonomy, allowing the child independent and self-chosen action. Ryan and Deci (2000) emphasize the child's perception of action as volitional. However, the effects of autonomy support are hard to define and disentangle because aspects of autonomy support are often included in measurements of other parenting characteristics such as responsiveness, which may include perspective taking or emotional validation (Clark & Ladd, 2000), or non-power assertive discipline and guidance (Kochanska, 1991), which appear to be a more autonomy-supportive form of behavioral control. A large body of research includes autonomy support as one facet of a warm-but-firm (authoritative) parenting style that creates an emotional climate of collaboration within the parent-child relationship (Baumrind, 1991; Dornbusch, et al., 1990; Eccles, et al., 1997; Laible & Carlo, 2004; Steinberg & Elmen, 1986). This does not disentangle the unique effects of autonomy support over general relationship quality or family climate, although sometimes the unique and direct effects of warmth, autonomy, and control are examined (Barber, Stolz, Olsen, Collins, & Burchinal, 2005; Baumrind, 1991; Gray & Steinberg, 1999). Because autonomy support always occurs in the context of other family characteristics, it is helpful to include or control for other parent and family factors. This is particularly true of a more generalized warmth and support as this dimension often moderates or mediates the effects of other aspects of parenting such as parental control (Doyle & Markiewicz, 2005; Ispa, et al., 2004; Pettit, Bates, & Dodge, 1997) and is

predictive of many aspects of child social-emotional adjustment (Eisenberg, et al., 2005; Laible & Carlo, 2004). This study assumes optimal autonomy support will always be context dependent. It also assumes autonomy support is a continuum and that complete independence and autonomy for children is not a legal or moral option for children. Even in adolescence unilateral child decision-making contributes to poorer adjustment across ethnicities (Lamborn, Dornbusch, & Steinberg, 1996). The various approaches to defining autonomy will be discussed at greater length in the literature review.

**Moderators of Effects of Parenting Behaviors**

Increasingly researchers are addressing the question of whether the effects of parenting practices are moderated or altered by child risk, or by demographic characteristics such as race which may reflect cultural differences in beliefs and expectations about parenting. Research examining moderating effects and interactions has found that parenting variables do not have uniform effects across all contexts, cultures, and children with varying temperaments and challenges (Blandon, et al., 2010, Chao, 2001; Deater-Deckard & Dodge, 1997; Landsford, et al., 2005; Lansford, Malone, Dodge, & Chang, 2008; Lin & Fu, 1990). Hence, it is important to consider the effects of child risk and race as well.

**Autonomy Support and Child Risk**

Most children expect to be granted increasing autonomy with age (Baumrind, 2005; Campione-Barr & Smetana, 2008; Daddis, 2008), especially during adolescence. However, a child's ability to handle increased autonomy and a greater role in decision-making may depend on the child's self-regulatory abilities. Although it makes intuitive sense that parental autonomy granting would vary differentially depending on children's self-regulatory abilities, little research to date has examined that question.

Research examining effects of problematic child behaviors and characteristics on parenting is mixed. Longitudinal research examining whether children's behaviors or attributes such as effortful control or externalizing predicted later parenting has produced inconsistent results (e.g., Eisenberg, et al., 2005; Lansford, et al., 2011; Stoolmiller, 2001). Additionally, some evidence exists that the effects of parental control, some conceptions of which may correspond roughly to the inverse of autonomy-granting, differ according to children's early dysregulatory risk (Blandon, et al., 2010). Although substantial evidence suggests aggression in children is related to and can create family patterns of cycles of coercion (Patterson, 2002), little evidence is available regarding whether parents whose children exhibit early signs of aggression and dysregulation follow a different trajectory of autonomy support.

**Looking at Context**

Increasingly, research has examined variations in culture and context from a strength based perspective. Resiliency research has examined the strengths of low-income and minority families, looking at within-group variation (De Von Figueroa-Moseley, Ramey, Keltner, & Lanzi, 2006; Mendez, Fantuzzo, & Cicchetti, 2002; Miller, 1999; Orthner, Jones-Sanpei, & Williamson, 2004; Wyman, et al., 1999). Theoretical approaches such as human ecological theory (Bronfenbrenner, 1989) and developmental systems theory (Ford & Lerner, 1992) have stressed the importance of including contextual variables in analyses. A growing body of work suggests that parenting practices that are associated with poorer outcomes for European American children may have either positive or less negative effects in other ethnic or socio-economic contexts (Brody & Flor, 1998; Chao, 2001; Fuligni, 1998; Ispa, et al., 2004; Jackson-Newsom, et al., 2008; McGroder, 2000). A recent study found parental control appeared beneficial for later emotion regulation when combined with high parental warmth and positive

behaviors, but was associated with more problem behavior years later when early levels of dysregulation and aggression were high (Blandon, et al., 2010). This newer research raises questions and point to gaps in the literature regarding how the effects of parenting behaviors may differ depending upon a child's early risk trajectories.

**Racial Differences**

Some, but not all, research indicates there are racial and cultural differences in the degree to which parents allow or encourage children's autonomy (e.g. Chao, 2001; Fuligni, 1998; Lin & Fu, 1990; Mandara, 2006). Often the degree of autonomy support is implicit in the descriptions of parenting rather than explicitly stated. For instance, African American families are more likely to have a "no nonsense" style of parenting (Brody & Flor, 1998) and the African American version of authoritative parenting is somewhat stricter or more directive than is true with European Americans (Mandara, 2006). However, inconsistent results and debate remain (Dearing, 2004). Researchers using a standard measure found an authoritative parenting style (which includes autonomy support as well as supportiveness and behavioral control or monitoring) is beneficial and ideal across ethnic groups (Bronstein, et al., 1996; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, 1990). However, parenting styles oriented toward high parental authority with less autonomy and warmth (Baumrind's, 1991,authoritarian style) do not have as much association with negative outcomes with other ethnic groups as they do with European Americans (Chao, 2001; Deater-Deckard & Dodge, 1997; Landsford, et al., 2005; Lansford, Malone, Dodge, & Chang, 2008).

Although much earlier research confounded SES and minority status, some studies (Dearing, 2004; Le, et al., 2008) have begun to disentangle effects of neighborhood, income/SES, cultural values, context, and ethnicity or race. McElhaney & Allen (2001) found

maternal autonomy granting related to better social functioning for low-risk 9th and 10th grade students, but to poorer social functioning for high-risk students (risk defined by low-income *and* inner-city residence). Both SES and ethnic/racial differences in the degree of control versus autonomy have been noted and many non-Western European cultures place a higher value on parental authority and deference to authority than is typical for higher SES European-American families (Brody & Flor, 1998; Chao, 2001; Fuligni, 1998; Ispa, et al., 2004; Jackson-Newsom, et al., 2008; McGroder, 2000). In contrast to those studies, Bluestone and Tamis-LeMonda (1999) found reasoning to be the most common parenting strategy for African American parents. Although research to date is mixed, understanding the relationships among race, beliefs and behaviors regarding parental authority, and autonomy support is further along for families with adolescents than for families with preadolescent children. This study examines racial differences in the effects of autonomy support on social competence among low-income families.

**Parent Report Versus Child Report**

Parent report measures of parenting practices and characteristics of the home environment are commonly included in studies of the effects of parenting practices on child outcomes. Especially with young adults or adolescents, research on parenting and adolescents sometimes assess adolescent perceptions or reports of parenting practices (Adalbjarnardottir & Hafsteinsson, 2001; Fuligni, 1998). However, adolescent reports of the quality of parent-child relationship, conflict, communication or disciplinary practices are often inconsistent with parent reports (Holmbeck & O'Donnell, 1991; Jackson-Newsom, et al., 2008; Keith, Huber, Griffin, & Villarruel, 2002; Paulson & Sputa, 1996). This inconsistency highlights the problems inherent in self-report measures. While it is important to understand self-reported parental beliefs and practices about parental authority and autonomy support, this does not uncover the more subtle

and situation-specific processes by which parents act upon their general parenting beliefs. Sometimes scenarios are included in measures, asking parents what they would do in a particular situation (Bluestone & Tamis-LeMonda, 1999). This adds some degree of specificity, but it is still a measure of expected behavior not actual behavior. Observational measures alleviate these drawbacks of self-report measures. Observational measures are particularly important in the study of autonomy support as some researchers contend that the differences between pressuring or coercive practices and autonomy supportive practices may be subtle practices which allow the child to perceive an action as voluntary (Deci & Ryan, 2000; Grolnick, 2003). In that light and in light of studies such as Clark & Ladd (2000) that defined autonomy as responsiveness and found no effect on social competencies, it is important to distinguish autonomy support from responsiveness, parental empathy, and perspective taking. Examining autonomy support in the context of a parent-child discussion task highlights differences in degree of parental autonomy support and emphasizes its transactional nature.

## Theoretical Frameworks

The questions posed in this study and the approaches taken to address them are underpinned by several theoretical frameworks. These are the Family Life Course Developmental Framework and two somewhat related theories emphasizing context, namely Bronfenbrenner's Bio-Ecological Theory and Developmental Systems Theory. The developmental niche framework, while not a theory, is included as well. These theoretical frameworks and their application to this study will be described, followed by conceptual maps showing the application of the theories to the specific study questions. Finally, the study questions and hypotheses proposed will be listed.

### Family Life Course Developmental Framework

In addressing autonomy support in a family context, life course frameworks stand out with obvious theoretical relevance. Key concepts in the family life course theory include roles, norms, and transitions. Norms of parental autonomy granting change over time with the increasing developmental maturity of children, but often the transition to adolescence is a developmentally key milestone related to autonomy support. Additionally, norms of autonomy support are dependent on historical context, and culture (Smetana, 2002).

Several theories with a life course perspective have arisen in developmental and family science. According to White and Klein (2008) these frameworks can be integrated with clarity and utility into *the family life course developmental framework. Individual life span theory, family developmental theory, and life course theory* all focus on individual and family change and development over the entire life span (Aldous, 1990; Elder, 1998; White & Klein, 2008). Additionally, differences due to birth cohort and historical time periods also provide an important perspective in these frameworks. The framework covers ontogenetic development from infancy through the end of life. Examining parental autonomy support of children involves recognizing potential and normative change over time for both the children and the parents. It is the overarching framework of family life course developmental framework, as explained by White and Klein (2008), that will be the one of the theoretical frameworks utilized in this research.

The family life course developmental framework rests on a number of assumptions and principles. One is the recognition that developmental change affecting family norms, structures, and roles is inevitable and important (White & Klein, 2008). Another assumption is that the family is affected by all levels of analysis from individual, to family sub-groupings, to relatively homogeneous societal clusters structured by ethnicity and social class, to institutional norms and

conventions about the family in larger society (White & Klein, 2008). A third assumption is that time is multidimensional and marked by historical events such as the depressions, wars, or hurricanes, family events such as "after the baby was born" as well as conventional markers such as calendar time. Elder (1998) emphasizes timing in lives as a key principle, namely, when an event (such as a war or divorce) occurs in a person's life affects its developmental impact on a succession of life transitions. In the case of autonomy support, the key variable of how much autonomy is granted at a particular point in the life span determines whether autonomy support is adaptive or detrimental. The life course principle of *linked lives* is that social and historical influences are transmitted by interdependent networks of shared relationships (Elder, 1998). Thus, in the case of autonomy support, how much voice a child has in decision making may be affected by norms and values of parenting that are communicated through social networks, or by more proximal influences such as configurations of family circumstances that push toward earlier autonomy granting. A final principle in life course theory is that of *human agency*--through their choices and actions individuals shape their own life course—autonomy is exercised as well as granted. Therefore life course propositions regarding multi-directionality would assume that children, because of their personalities and temperament and through their own initiative and agency, would affect aspects of parenting such as autonomy granting, and that parenting would affect children.

**Contextual and Ecological Theories**

**Bronfenbrenner's Bio-ecological Theory**. Ecological theory also informs this study. The simple conceptual model developed by Bronfenbrenner introduced a needed change in the theoretical perspectives and research approaches in the study of child development (Bronfenbrenner, 1979, 1986, 1989). He insisted parent-child relationships needed to be

examined in natural settings. Bronfenbrenner conceptualized development taking place in nested environments labeled *microsystems*, *mesosystems, exosystems*, and *macrosystems*. See Figure 1. The microsystem is the immediate environment in which one physically located and where one's daily interactions take place, such as the family, a sports team, or a school classroom. The mesosystem is the intersection of microsystems—where some classmates may be on the soccer team or where parents attend school events. The exosystems are those systems which may affect children, but with which they have no direct involvement—for instance, a parent's work environment that impacts family stress level, income, and allotted vacation time. The macrosystem includes the larger social context, the government, culture, health systems and so forth. Later Bronfenbrenner added the concept of *chronosystem* wherein systems pass through time and change over time. In his view, development entails an ongoing process of accommodation between the developing organism and its environment. Ecological theory recognizes that social competence develops primarily in microsytem environments, particularly in the microsystem of the family or the parent-child relationship. Within the family microsystem, parents influence children, but children also influence parents, such that child risks and behaviors may also affect parenting strategies or practices. However, ecological theory also sees the influence of the larger context on children's development as well. Cultural patterns of child-raising present in larger communities, which may differ by race, can affect children directly, creating expectations of what good parents are supposed to do, but also indirectly through influences on parents' behaviors. The effects of restricting autonomy may be dependent on the relative safety of neighborhood environments, for instance, as both families and communities comprise interdependent ecological systems.

**Developmental Systems Theory**. Initial research informed by ecological theory tended to use demographic indicators of race or family structure as an attempt to include wider system factors. However, ecological theorists recognize that this approach says nothing about *process*, nor does it recognize or account for within group variation. Other theorists utilize ideas similar to Bronfenbrenner's and expand further on the concept of context. Developmental Systems Theory (Ford & Lerner, 1992), which combines Ford's living systems framework and Lerner's developmental contextualism, insists that people are not just residing within contexts, but are "'fused' with their contexts across life" (Ford & Lerner, 1992, p.77). From that perspective, parents and children are continually interacting with each other over the years and children's self-regulation, autonomy support, and the whole of parental practices and behaviors cannot be dissected apart, but form a mutually reinforcing pattern that is meaningful only as an integrated system.

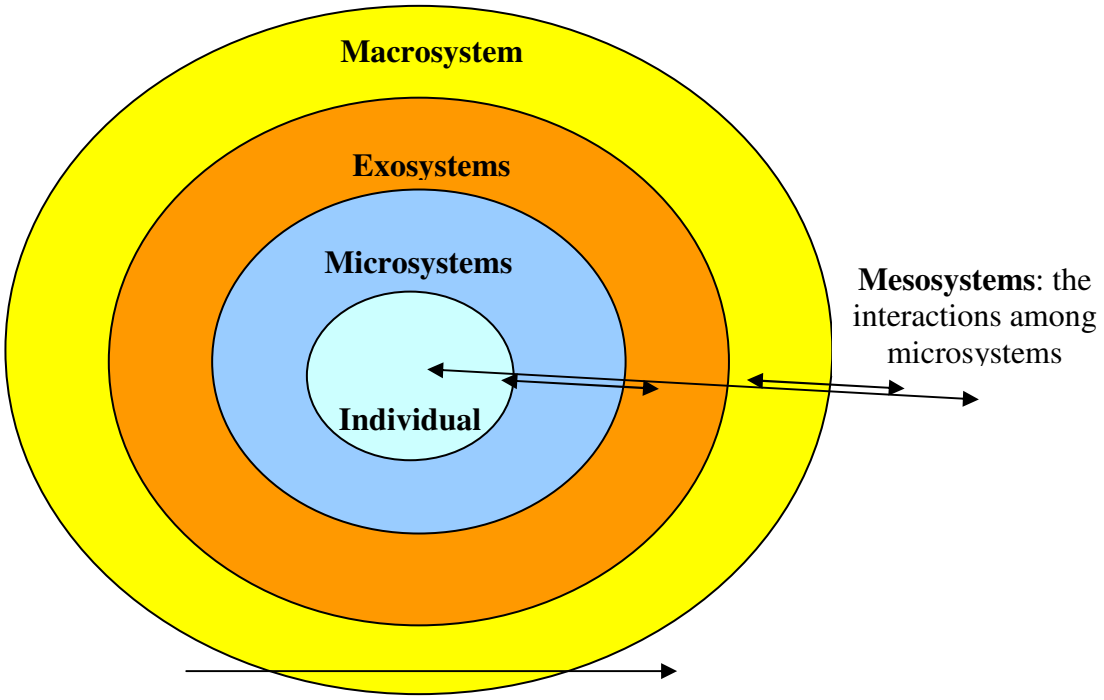


**Figure 1. Bronfenbrenner's Ecological Theory of Human Development**
(For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this dissertation.)

**Developmental Niche framework.** In this framework (Coll, et al., 1996), which does not claim to be a formal theory, "the physical and social settings of everyday life, the customs of childcare, and the psychology of caretakers are seen as three integrated subsystems of the niche, each with its own relations to the larger environment" (Super & Harkness, 1986, p.546)". Like ecological theory, culture is posited to influence the developmental context of the child. However, the social settings and the customs or styles of parenting (which are manifestations of culture) are seen as direct and proximal forces, rather than outer tier or distal forces (Le, et al., 2008). Prejudice, discrimination, and social stratification are viewed as forces which directly

impact the developing child. These would affect the settings and practices of childcare that are passed down, culturally informed, and taken for granted as normal and needed, and that potentially differ by racial context. On the other hand, responses to the dysregulatory risk of particular children would be specific to families or dyads and presumably would not be driven by racial context, although responses or accommodation to a child's level of early dysregulation could differ by norms specific to racial contexts.

**Application of Theory to This Study**

In summary, each of these theories or frameworks highlights key assumptions of this study and informs the hypotheses proposed. First, in accordance with the life course framework, developmental needs are assumed to change over time and the timing of parental practices matters. For instance, both the timing of autonomy granting relative to that of other families in their community and in relation to the developmental maturity of the child, may affect whether autonomy support is linked to greater social competencies. Also, the normativeness of expectations of autonomy versus parental directiveness and authority are assumed to at least partially account for racial differences. All the theories discussed emphasize the role of context in development. This study assumes that race reflects social, cultural and developmental contexts that are influential and relevant, although, except for low-income, this study is limited in being unable to directly measure those contexts. Finally, this study accepts the theoretical assumption that, within a family system, bi-directional influence is pervasive. Children's characteristics, such as their self-regulatory abilities, are assumed to affect parental practices, attitudes, and behaviors. This study builds upon these theoretical assumptions in formulating the research questions and design, combining an examination of micro-contextual influences (dysregulatory risk) and the more macro level influences of poverty and race.

## The Current Study

### Gaps in the Literature

Given the paucity of knowledge regarding how parental autonomy support may interact with child dysregulatory risk and growing evidence that less autonomy-supporting styles of parenting may have differential effects depending on racial-ethnic context, beginning to understand how these potential moderators of parenting on children's social competence may relate to each other is a crucial next step. This study addresses several understudied areas and gaps in the literature. First, there is insufficient and inconsistent evidence regarding whether parents adjust their behaviors as a result of earlier child problems. In particular, no research to my knowledge has addressed whether autonomy support in late childhood differs if children were highly aggressive or dysregulated as toddlers. Also, to my knowledge, previous studies have not examined racial differences in preadolescent autonomy support in the context of instructions to jointly work toward a resolution of a parent-child disagreement. In addition, testing whether the potential moderators of dysregulatory risk and race interact reaches into uncharted research territory. Finally, utilizing the context of a parent-child discussion task where autonomy support reflects a parent-child communication style more than a disciplinary style, allows differences in parental autonomy support to be more readily observed.

### Study Goals

The goals of this study address each of these gaps in the literature. Two preliminary goals set descriptive parameters for the primary research question. These preliminary study goals were to examine relations between early dysregulatory risk and parents' provision of autonomy support and to study relations between race and provision of autonomy support (See Figure 1). The primary purpose of this study was to gain understanding of how autonomy support in a

problem-solving discussion task is related to social competence and whether the relationship is moderated by dysregulatory risk or race (See Figure 2). Parental practices supporting the development of social competence may differ depending on context or initial developmental trajectories of children. This study aims to increase understanding of how parental autonomy support is played out in preadolescence and how individual and racial contexts intersect to affect parent-child relationships and developmental outcomes.

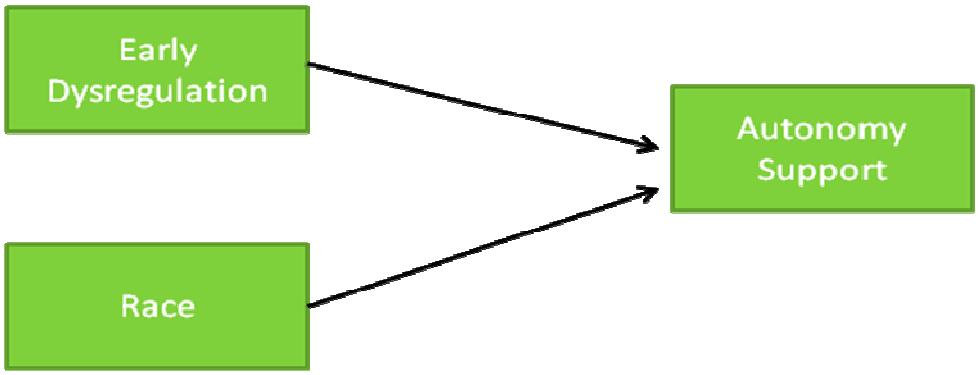


**Figure 2. Conceptual model for study questions 1 and 2.**

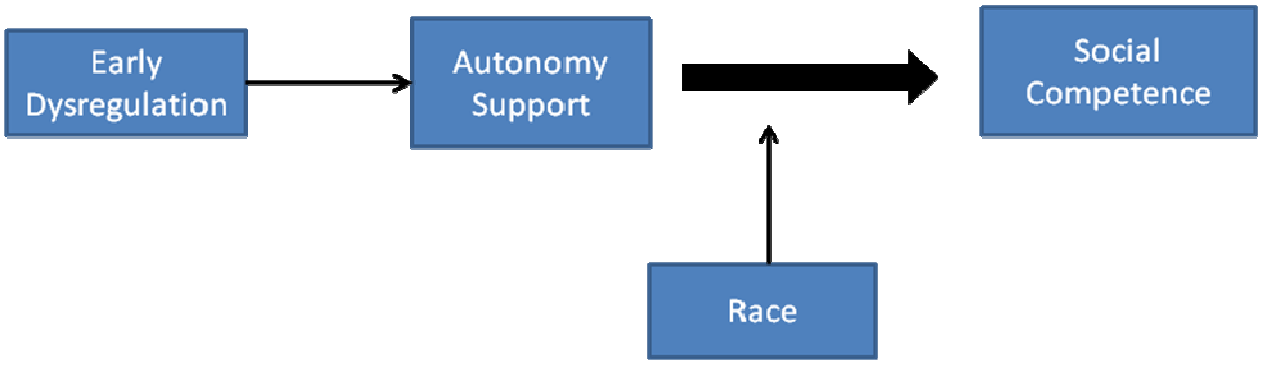


**Figure 3. Conceptual model for study question 3.**

**Operational Definitions of Study Constructs**

In this study, parental autonomy support was the degree to which the parent allowed or facilitated the child's initiative and contribution in a parent-child discussion of a conflict to be resolved (Grolnick, Deci, & Ryan, 1997). It was operationalized as an average of five behaviors gleaned from a checklist of behaviors observed in the course of the discussion (West, et. al., 2010). For each item, the behavior expressing the most autonomy or autonomy support was scored 1 and the least autonomy supportive option scored 0. For example, the child proposing a compromise or solution, and the child picking the topic to discuss were scored 1. A scale was created with a range from 0 to 1. Social competence, for the purposes of this study was a measure of teacher-report survey measures of cooperation and self-control (Gresham & Elliot, 1990; Joussemet, Koestner et al., 2005) standardized. Dysregulatory risk was defined as

aggression and lack of self-regulation emerging in early childhood (Blandon, et al., 2010). It was operationalized in this study by a composite of a parent-report aggression measure (from the Child Behavior Check List, CBCL, Achenbach & Rescorla, 2001) and a direct assessment of regulation (Bayley, 1993). The participants in this study were self-identified as black/African American or white/European American.

## Research Questions and Hypotheses

### Preliminary Questions

*Question 1*: Does maternal autonomy-granting in fifth grade differ on the basis of level of early dysregulation risk?

*Hypothesis 1:* Early dysregulatory risk will be associated with lower autonomy support in a parent-child problem solving discussion task.

*Question 2*: Does maternal autonomy support in fifth grade differ on the basis of race in a low-income sample?

*Hypothesis 2:* African American parents will be less supportive of autonomy than European American parents.

### Primary Study Questions:

*Question 3:* Does autonomy support predict social competence in fifth grade children?

*Question 4:* Does the relationship of autonomy support in fifth grade to social competence in the fifth grade differ on the basis of child dysregulatory risk?

*Question 5:* Does race moderate the relationship of autonomy support in the fifth grade to fifth grade social competence?

*Hypothesis 5:* With African American families, the relationship of autonomy support to fifth grade social competence will be weaker than with European American families.

Chapter 2 will present a review of the literature relevant to these study questions.

# CHAPTER TWO: LITERATURE REVIEW

The questions proposed in this study address particular gaps in our understanding of how parental autonomy support is related to children's social competence in fifth grade and asks if these relationships differ according to children's early dysregulatory risks and if they differ between African American and European American families. This review will first outline how autonomy support is defined and discussed in the literature. Research investigating the effects of autonomy support in the context of parental supportiveness and control will also be presented, as sometimes these concepts overlap and much of the research looks at these three in combination with each other. Research examining racial differences related to autonomy support will also be included. Child outcomes related to autonomy support will be reviewed, although relatively little is understood about the relationship of parental autonomy support to children's social competence, in particular. Then, as background for the study questions, a general review of the development of autonomy and social competence will be presented. Since the content of the current study comes from problem-solving discussions between a parent and fifth grade child, sections on the transition to adolescence and parent-child communication will also be included. Finally, potentially moderating risk factors will be discussed. Early developing dysregulatory risk is the primary risk factor examined in this study. As family conflict and low SES are also controlled for in the current study design, relevant literature will be presented.

## Parenting

### Autonomy Support

If *autonomy* "includes a sense of self-efficacy, agency, and individuation that enables persons to be self-determining" (Baumrind, 2005, p. 67), then autonomy support should be those parental actions that promote self-efficacy, agency, and individuation. Autonomy is "freedom to

carry out actions on one's own behalf while maintaining connections to significant others" (Collins, Gleason, & Sesma, 1997, p.78). Autonomy is differentiated in the literature as *behavioral autonomy* which is a matter of choosing and governing one's own actions (Sessa & Steinberg, 1991), *emotional autonomy,* which is refers to individuation from parents and less idealizing of parents, or *cognitive autonomy*, which refers to an inner sense of self-reliance and being able to make decisions on one's own (Collins, Gleason, et al., 1997). Sometimes the term *psychological autonomy* is used to emphasize allowing independence of mind, encouraging individuality, and non-coercive, democratic discipline (Herman, Dornbusch, Herron, & Herting, 1997; Roberts & Steinberg, 1999). A definition capturing the concept of supporting cognitive autonomy is "encouraging children to be self-initiating and volitional in their actions…providing the supports necessary for children to feel ownership of their actions, to feel as if their actions were emanating from themselves. It does not, however, mean making children wholly self-reliant, independent, or detached" (Grolnick, Deci, & Ryan, 1997, p.155), although often autonomy and independence are fused in the literature. The process by which these scholars theorize that actions come to be viewed as "emanating from themselves" will be described later in the discussion of Self-Determination Theory. Autonomy support in this study will align with the Grolnick, Deci, and Ryan definition and will reflect the parent's support and encouragement of the child's initiative and input in resolving a conflict.

**Debate regarding autonomy.** Debate in the scholarly community regarding autonomy is sometimes due to philosophical/theoretical viewpoints, definitional issues, mixed empirical evidence and the changing role of autonomy in the life course of the developing child. There are differences in values and norms between cultures that value independence more highly versus collectivist cultures that value harmony, interdependence, and deference to family authority

(Carver & Scheier, 2000; Cheung and Pomerantz 2011; Oyserman, Coon, & Kemmelmeier, 2002). Research suggests that both autonomy and relatedness are valued in other cultures, with variations in emphasis and expression (Dennis, Cole, Zahn-Waxler, & Mizuta, 2002; Fuligni, 1998). Autonomy supportive approaches to homework help might be viewed as avoiding intrusiveness for American parents, but a failure to appropriately train the whole child by Chinese parents (Cheung and Pomerantz 2011). There is also some debate whether autonomy is beneficial (Lamborn & Steinberg, 1993; Ryan & Lynch, 1989). For instance, delaying granting autonomy in immigrant families of adolescents helps maintain positive family relationships and cohesiveness with cultural values (Kwak, 2003). Differences in definition or degree of autonomy contribute to discrepancies in the direction of outcome measures. For instance, granting adolescents unilateral decision-making power (complete autonomy) is associated with increased delinquency across all ethnicities (Lamborn, Dornbusch, & Steinberg, 1996).

It is important to measure autonomy as distinct from relatedness. Relatedness differed from autonomy in predicting delinquency in 16 and 18 year olds (Allen, Marsh, McFarland, McElhaney, Land, Jodl, & Peck, 2002). Research comparing cultures distinguishes an orientation toward relatedness from an orientation toward autonomy, although valuing interdependence and independence are too often unnecessarily viewed as mutually exclusive (Neff, 2003). For instance, Japanese mothers of preschoolers emphasized relatedness in their interactions while U.S. mothers emphasized autonomy and achievement more, although autonomy and relatedness coexisted and were related to task context (Dennis, et al., 2002). Debate and research on emotional autonomy in the late 1980's and early 1990's highlights the importance of this distinction. As mentioned, emotional autonomy is a measure of individuation, de-idolizing of parents, non-dependence on parents and recognizing parents as individuals

beyond their role as parents (Lamborn & Steinberg, 1993). Ryan and Lynch (1989) characterize Steinberg and Silverberg's (1986) emotional autonomy as *detachment* and point out its inverse association with independence support, family cohesion, parental acceptance and perceived lovability. Lamborn, Dornbusch, and Steinberg (1996) counter that emotional autonomy *in the context of high parental support* is associated with positive outcomes such as greater psychosocial development and academic competence than that of connected-but-less-autonomous peers, but also with the negative outcomes of more internal distress and behavior problems such as alcohol and drug use and associating with more deviant peers. High emotional autonomy and low parental support were associated with overall poorer adjustment.

Researchers' autonomy-related constructs differ from each other, but autonomy support or autonomy granting generally emphasizes one or the other or both of the following: a) perspective-taking and emotion validation, recognizing and affirming the child as a person with his or her own ideas (Le, et al., 2008), b) granting choice, self-determination (Carver & Scheier, 2000) or tacit permission to take initiative in or make decisions in one or more domains of the child's life (Smetana, 1997, 2002). The first emphasis is on actions that support the youth's separate identity and is more related to emotional autonomy and second on the youth's action and is more related to cognitive autonomy. In the case of young children, mother's complying with their children's requests has been used as a measure of autonomy granting (Kochanska & Kuczynski, 1991), presumably because this enhances the child's sense of agency and supports their initiative and choice.

One view is that autonomy support is a distinct concept from (lack of ) *psychological control* (Silk, Morris, Kanaya, & Steinberg, 2003) if autonomy is defined as promotion of independence, but psychological control and autonomy support correlate highly if autonomy

support is defined as (not) supporting volitional functioning (Soenens, Vansteenkiste, & Sierens, 2009). Psychological control impairs psychological independence and secure autonomous functioning, but lack of psychological control does not equate to active autonomy support (B.K. Barber, et al., 2005). Psychological control, according to an extensive analysis by Brian K. Barber et al. (2005), is most uniquely and strongly related to adolescents' mental health impairments. A long standing and substantial body of research includes psychological control (or its purported positive counterpart, autonomy support) along with the dimensions of support and control/structure/discipline as three primary dimensions along which parenting can be classified and which contribute broadly to children's functioning (B.K. Barber et al., 2005, Steinberg, et al., 2001). Finally, supporting choice and volition is not necessarily a dichotomous variable. Seeking input from the child, allowing or encouraging the child to take initiative, express opinions and considering the child's opinions in decision-making grants varying degrees of autonomy. Autonomy granting, as will later be discussed in more depth, also varies by domain (Smetana, 1997, 2002).

**Autonomy as independent action and choice—Social Domain Theory.** One body of research classifies issues over which parents and children may believe parents legitimately ought or ought not to have authority into domains (Smetana, 1997, 2002). These domains are *moral*, *conventional, prudential*, *pragmatic* and *personal.* Moral issues are those for which there is considerable universal consensus are wrong because they hurt others. Conventional issues are generally culturally dependent rules about what is appropriate and acceptable, including manners and conventions for showing respect. Prudential issues are issues of safety and personal issues are those which generally are considered a matter of taste. The personal domain is the domain over which youth and their parents are most likely to believe youth should have autonomy and

freedom of choice. For youth, examples of the personal domain usually include the type of music listened to, clothing, and hobbies. Sometimes an issue may overlap domains or be hard to classify. Parent-child disagreement occurs more often in these areas. A key point in this framework is that youth and parents tend to have different viewpoints about which issues and which domains parents should allow youth to make their own decisions, with decisions in the personal domain most likely to be viewed by youth and parents as an area where youth can make their own decisions (Smetana, 1995, 2002). The issues over which parents exert control or believe they have legitimate authority vary by culture, race, age of child, and parenting style. For instance, research indicates youth across classes in Brazil have a personal domain over which youth feel they should have jurisdiction and class differences disappear at older ages (Nucci & Camino, et al., 1996). More authoritarian parents expect to make decisions for youth in all or most domains, while permissive parents view themselves as having little authority in most domains (Baumrind, 2005; Maccoby & Martin, 1983). Also, youth tend to perceive decision making and how much autonomy has been granted differently than their parents, with greater differences in perceptions and too early decision making in high school associated with poorer grades (Dornbusch, Ritter, Mont-Reynaud, & Chen, 1990). Parents perceive themselves as higher on aspects of parenting than did their high school age children (Paulson & Sputa, 1996).

**Autonomy as a basic need (Self-Determination Theory).** Family and developmental researchers have widely divergent views of the nature and role of autonomy in human development. Cross-cultural research tends to identify autonomy as a culturally determined variable, with cultures identified as more interdependent or collectivist devaluing autonomy and valuing the needs of the group of family more highly, and Western cultures, conversely, valuing independence and autonomy more highly (Carver & Scheier, 2000; Dennis, et al., 2002; Fuligni,

1998). Self-Determination Theory posits autonomy, competence, and relatedness are innate and universal psychological needs, although their expression and relative balance may be culturally determined (Ryan & Deci, 2000). Autonomy is seen in Self-Determination Theory, not as the antithesis of relatedness, but the feeling of volition accompanying an act, an internal locus of control (Grolnick, et.al., 1997). Examined in the light of Self Determination Theory, the adverse consequences associated with psychological control are a result of undermined senses of competence, autonomy, and relatedness (Soenens & Vansteenkiste, 2010; Soenens, et al., 2009). Scholars influenced by Self-Determination Theory emphasize the importance of autonomy support and view parental control methods using coercion, deadlines, pressure, rewards, or manipulation as undesirable (Grolnick, 2003; Grolnick, et al., 1997). In Self-Determination Theory actions originally externally imposed can become, over time, first, *introjected*, then identified with, then through the developmental process of reciprocal assimilation become integrated into the self and autonomously generated (Deci & Ryan, 2000; Grolnick, et al., 1997). This final, highly autonomous stage is called integrated regulation (Grolnick, et al., 1997). The measurement problem with the construct of autonomy, as defined in Self-Determination theory is that autonomy support is determined by the (child's) perception of volition and not ultimately by the action of child or parent (Carver & Scheier, 2000).

**Autonomy and social competence.** Few studies have specifically examined the question of whether autonomy support has direct effects on social competence in preadolescent or younger children. One important and relevant exception looked at several indicators of social competence in five year olds, namely quality of friendships, number of friendships, and classroom peer acceptance (Clark & Ladd, 2000). In this study, rooted in attachment theory, mothers and children were instructed to share stories of positive and negative, shared and non-

shared personal experiences. The study defined autonomy support as "the degree to which parents were responsive, reflective, and validating of the child's opinions, feelings, and perspectives" (Clark & Ladd, 2000, p.485). Factor analysis distinguished connectedness (positive engagement, mutual warmth, reciprocity, intimacy, and happy emotional tone) from autonomy support (responsiveness, validation, and reflecting). The study found the relationship of connectedness to social competence was mediated by a prosocial orientation. A hierarchical regression model, with connectedness entered first, indicated connectedness and autonomy support predicted several indicators of social competence. However, when autonomy support was entered before connectedness, it was no longer significant, although connectedness remained significant. Autonomy support (validation, responsiveness, and reflection) and connectedness (positive engagement, happy emotional tone, intimacy and reciprocity) loaded separately in a factor analysis, but were correlated. In this discussion task where autonomy support was often expressed by positive, contingent responding, the operationalization of autonomy support and connectedness overlapped (Clark & Ladd, 2000). In light of Clark and Ladd's study, the current study, which also coded a parent-child discussion task, operationalized autonomy support as opportunities for child input and control in the discussion and child determination of the problem to be discussed. Similar to the Clark and Ladd study, a warmth/connectedness measure was included in the regression analyses.

Some studies have addressed the relationship of autonomy support to facets of social-emotional competence, but usually during adolescence. One study that did examine autonomy support in relation to school social adjustment in elementary school, found maternal autonomy support at age five was predictive of teacher rated social adjustment at age eight including cooperation, self-control, courtesy, and good sportsmanship (Joussemet, Koestner et al. 2005).

The sample was composed of white, upper class and working class Canadian families. Autonomy support in that study was defined by four ingredients, empathy, rational explanations, choice, and noncontrolling language. In another study, elaborating on and validating youth's ideas and suggestions, which is conjectured to enhance autonomy and competence, was related to task persistence, self-regulation and better classroom behavior at age 13 (Hutt, Wang, & Evans, 2009). For both Chinese and American adolescents decision-making autonomy was associated with positive emotional functioning (Qin, Pomerantz, & Wang, 2009). In older high school students, adolescent autonomy—as defined by giving reasons and confidence in ones' position in a mother-adolescent disagreement discussion—was not significantly associated with social skills or deviancy, but was correlated with the maternal autonomy in the same task (Allen, et al., 2002).

**Autonomy and other outcomes**. More often autonomy support is examined in relationship to achievement or intrinsic motivation. Autonomy support is related to achievement in high school across ethnic groups if it is comprised of joint decision making rather than unilateral youth decision making (Dornbusch, et al., 1990). Too early granting of unilateral decision-making was associated with poorer achievement (Dornbusch, et al., 1990). Autonomy support, or psychological autonomy, was predictive of academic competence and lower externalizing and internalizing in 10-year-olds after controlling for SES (Mattanah, 2001). Psychological autonomy predicted positive outcomes in the domains of academics, physical and psychological health, and deviancy for a diverse group of high school students (Herman, Dornbusch, Herron, & Herting, 1997). Kelly et al. (2000), found autonomy support conducive to the development of mastery motivation, yet maternal controlling behavior had no relationship to children's pride, shame, and persistence or avoidance behaviors a year later. Low-achieving

children (as evidenced in a challenging task and grades) were more positively affected by mothers' autonomy support than were high-achieving students, while maternal control had negative associations for both (Ng, Kenney-Benson, & Pomerantz, 2004) . Autonomy support enhances intrinsic motivation and internalization of values (Deci & Ryan, 2000; Grolnick, et al., 1997). A comprehensive meta-analysis by (Deci, Koestner, & Ryan, 1999) found tangible rewards expected by children and contingent upon task performance undermine intrinsic motivation, as children appear to interpret actions performed for reward as generated by an external source rather than as a completely autonomous action.

**Parenting Style: Warmth, Control, and Autonomy Support**

When parenting is simplified (or oversimplified) to two primary dimensions by researchers, scholars, practitioners or lay persons, the two dimensions specified are generally a control dimension, and a warmth dimension that often includes other aspects of emotional connection as well (B.K. Barber et al., 2005). In the literature utilizing typologies of parenting, also called parenting styles, autonomy support is often included as a third primary dimension (B. K. Barber, 1997; Baumrind, 1991; Fletcher & Jefferies, 1999; Steinberg, 2001). Barber and Olsen (1997) include autonomy and label the three dimensions as *connection* (warm, emotional bond), behavioral *regulation* (fair, consistent limits on behavior) and *psychological autonomy* (permission to experience, express, and value one's own thoughts and emotions) (B. K. Barber & Olsen, 1997). A family climate characterized by high parental acceptance or support, high behavioral control, and psychological autonomy support is usually called an *authoritative* parenting style (Baumrind, 1991, Steinberg, 2001). Another term chosen for an authoritative parenting style was *aware parenting* (Bronstein, et al., 1996). The family climate created by authoritative parenting is associated with positive psychosocial outcomes from early childhood

through adolescence (Amato & Fowler, 2002; Baumrind & Black, 1967; Bronstein, et al., 1996; Darling, 1999; Maccoby & Martin, 1983; Mandara, 2006; Steinberg, 2001) and fewer problematic behaviors (Fletcher & Jefferies, 1999; C. Jackson, Henriksen, & Foshee, 1998). This holds true across ethnic-racial groups including African American, Latinos and Chinese-American families, but most strongly for European American children (Amato & Fowler, 2002; Ballantine, 2001; Baumrind, 1991; Chao, 2001; Dornbusch, 1987; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Maccoby & Martin, 1983; Mandara, 2007; Park & Bauer, 2002; Steinberg & Elmen, 1986) irrespective of respondent (e.g. Galambos, 2003, Smetana, 2002). For European-American middle-class families, where an authoritative parenting style has been more common (Darling, 1999), it is frequently associated with academic performance benefits, with mixed results for other ethnic groupings (Chao, 2001; Darling, 1999; Kurdek, Fine, & Sinclair, 1995; Park & Bauer, 2002; Steinberg, 1990). One study found achievement scores associated with supervision only at low levels of autonomy support (Kurdek, et al., 1995). Because the effects of autonomy support often depend upon the presence or absence or parental warm support and behavioral control, definitions overlap, and warmth was controlled for in the current study design, some of the literature on the dimensions of warmth and control/demandingness will be reviewed next.

**Warmth.** The warmth and support dimension of parenting, however it is labeled, usually is a construct with elements such as warmth, nurturance, support, responsiveness, or positive regard (e.g., B.K. Barber, Stolz, Olsen, Collins, & Burchinal, 2005; Baumrind & Black, 1967; Darling, 1999; Patrick, Snyder, Schrepferman, & Snyder, 2005). Unfortunately, this construct often includes elements of autonomy support. Baumrind's responsiveness is essentially a combination of autonomy support and warmth. She states parental "responsiveness--

encouragement of independence, individuality, and verbal give and take, together with warmth and support—[was] related highly to all aspects of adolescent's competence, and to secure attachment to parents...[ but generally] did not deter externalizing problem behavior" (Baumrind, 1991, p.151). Sometimes parental support is construed more broadly to include proactive teaching and inductive discipline, a combination which is predictive of sixth grade adjustment even after controlling for kindergarten adjustment and is protective against the effects of family adversity and harsh parenting (Pettit, Bates, & Dodge, 1997) and psychological control (Caron, Weiss, Harris, & Catron, 2006). Parental warmth and acceptance are considered universally promotive of psychological adjustment (Rohner, 2004) and tend to be less differentiated in their effects (Caron, et al., 2006). Research over many decades has confirmed parental warmth or related measures such as acceptance or supportiveness are integral parts of parenting styles that support optimal development in children and adolescents (B.K. Barber, et al., 2005; Baumrind & Black, 1967; Dodge, Pettit, & Bates, 1994; Maccoby & Martin, 1983; Meteyer & Perry-Jenkins, 2009; Steinberg, 1990). Sometimes it is measured at the dyadic level as mutual responsiveness (Kochanska & Murray, 2000) synchrony (J. G. Barber, Bolitho, & Bertrand, 2001) or connection (Clark & Ladd, 2000).

Although a substantial body of research combines warmth, responsiveness, and similar qualities into one construct, separating out aspects of this dimension can be important. Responsiveness to distress (but not warmth) predicted better empathy and regulation of negative affect in middle childhood, but warmth predicted regulation of positive affect (Davidov & Grusec, 2006). Researchers continue to explore finer gradations of this dimension and its relationship to various developmental processes (e.g., Brophy-Herb, et al., 2010; Brophy-Herb, et al., 2011; Davidov & Grusec, 2006).

In infancy responsiveness was associated with secure attachment, emotional security, and adaptive functioning (Cummings & Davies, 1996; Main, Kaplan, & Cassidy, 1958). In toddlers, maternal warmth was associated with toddler general competence (Zimmer-Gembeck & Thomas, 2010), the quality of the parent-child relationship (Skuban, Shaw, Gardner, Supplee, & Nichols, 2006), and compliance (Kochanska & Aksan, 1995). In preschoolers it has been associated with emotional and social competence (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997). In adolescents it has been associated with positive values and social competencies (Hillaker, Brophy-Herb, Villarruel, & Haas, 2008), and sympathy, self-worth, and perceived social competence (Laible & Carlo, 2004). Warm, supportive parenting was associated with better negotiation and problem solving in early adolescence and facilitated improving family relationships through mid-adolescence (Rueter & Rand, 1995).

**Control.** The other broad dimension of parenting cited along with responsiveness/supportiveness in the parenting style literature is control (also referred to as demandingness, regulation, or structure (B. K. Barber, 1997; Baumrind & Black, 1967; Darling, 1999; Gray & Steinberg, 1999; Maccoby & Martin, 1983). The dimension of parental control has sometimes generated controversy within academic circles (Baumrind, Larzelere, & Cowan, 2002; Gershoff, 2002; Grolnick, 2003). Clearly, the most extreme and harsh forms of control are abusive. However, moderate, even-handed behavioral control in the context of warmth is generally associated with positive adjustment, particularly less externalizing, with variations by gender, culture, and context (Baumrind, 1991; Deater-Deckard & Dodge, 1997; Eccles, Early, Fraser, Belansky, & McCarthy, 1997). As some definitions of parental control often infer the inverse of autonomy support, scholars have employed various terminology and definitions to distinguish beneficial forms of parental control from problematic or less beneficial forms.

Psychological control has been distinguished from behavioral control (B. K. Barber, et al., 2005; Kakihara & Tilton-Weaver, 2009; Silk, et al., 2003). Psychological control, which controls children through manipulation, guilt, shame, possessiveness and criticisms with high negative affect, is seen as the converse of psychological autonomy support (B. K. Barber, 1997; B. K Barber & Buehler, 1996; Herman, et al., 1997). Measured in a parent-child discussion of a conflict (mean age 9.7), parental behavioral control was associated with less externalizing in the context of low psychological control, but more behavior problems in the context of high psychological control and when co-occurring internalizing behaviors are controlled for (Caron, et al., 2006). High behavioral control was associated with higher internalizing only in the context of high psychological control (Caron, et al., 2006). Psychological control in seventh grade was associated with later externalizing, internalizing and lack of self confidence (K. J.Conger, Conger, & Scaramella, 1997). Some researchers advocate non-harsh control, others prefer referring to the parenting element which addresses helping children do and learn developmentally important tasks and socially accepted behaviors they would not otherwise choose as *structure* (Grolnick, 2003), or *regulation* (B.K, Barber, et al, 2005). A basic assumption in traditional parenting literature is that teaching, influencing and controlling one's children is a primary responsibility of parents (Darling, 1999). However, while there is broad acceptance that some sort of control, influence, or guidance is needed, wide variation exists in the type of control or influence and how that influence is or is not balanced with support for child autonomy. Since this study examines parental autonomy support, defined as allowing children a measure of input or control in a discussion task, the issues overlap or are intertwined to some extent with the research on parental control.

**Interactions.** Dimensions of parenting often interact with each other in their effects on a number of child outcomes. For example, psychological control (a tactic at odds with autonomy support) interacts with behavioral control and warmth. Galambos, Barker, & Almeida (2003) reported high psychological control in the context of high behavioral control was related to externalizing among adolescents. No association of affection to externalizing was found in first and second graders except that high affection and high psychological control predicted increases in internalizing and externalizing, while behavioral control decreased externalizing but only with low psychological control (Aunola & Nurmi, 2005). As a side note, to the extent that psychological control is the inverse of autonomy support, this suggests that autonomy support is associated with lower levels of externalizing and that the benefits of affection and behavioral control are in conjunction with autonomy support. Spanking in African American, European American and Hispanic families was associated with increased problem behavior over time, but was moderated by emotional support (McLoyd & Smith, 2002).

## Potential Influences on Parenting

**Child effects on parenting.** Most often studies examine the effects of parenting on children's outcomes. However, theory suggests a bidirectional relationship whereby characteristics and behaviors of children may over time affect patterns of parenting. Some, but inconsistent, evidence supports this idea**.** Children with externalizing problems behave coercively with their parents (Dumas, LaFreniere, & Serketich, 1995) and elicit more coercive parenting (Anderson, Lytton, & Romney, 1986; Lansford, et al., 2011). High unmanageability in children under five predicted poorer maternal discipline practices in fourth grade, even after controlling for a variety of maternal risk factors (Stoolmiller, 2001). Difficult infant temperament was related to parental responsiveness, but only for high-risk parents (Crockenberg

& Leerkes, 2003). Other research found no effect of toddler regulation on subsequent maternal supportiveness (Hillaker, unpublished manuscript). Studies examining specific bidirectional effects for autonomy support were not found. That presents the reasonable question of whether parents are more directive and less supportive of autonomy if children are less able to regulate their own behavior or emotions.

**Interactions with child characteristics**. Child characteristics also interact with parenting behaviors. For children who had high levels of aggression and dysregulation as toddlers, parenting practices had inverse relationships to peer acceptance compared to the same practices with children not in that high-risk group (Blandon, et al., 2010). (The literature related to early dysregulatory risk will be discussed later at greater length in section on the development of children's autonomy and social competencies.) Child characteristics like pre-term or low-weight birth or mother-rated difficult temperate can exacerbate the effects of negative parenting on self-regulation (Poehlmann, et al., 2011) or highten the effect of either high quality or low quality parenting on first grade academic competence and social skills (Stright, Gallagher et al. 2008). Morris et al. (2002) found that for first and second grade children with poor effortful control or high irritable distress, parental hostility was associated with externalizing and psychological control with internalizing, but not for temperamentally low-risk children.

**Racial/ethnic variations in parenting.** While a broad array of parenting literature has utilized the parenting style construct, more recent work has challenged some of the underlying assumptions and linkages that are inherent in the traditional parenting style typologies (Brody & Flor, 1998; Chao, 2001; Jackson-Newsom, Buchanan, & McDonald, 2008; McGroder, 2000). The constructs of warmth, parental control, and autonomy support may not capture important elements of parenting in non-European American contexts. Relationship schemas, cognitions,

meanings, and expectations related to interactions, can vary with culture such that the same parenting practices can have different meanings and be associated differently with children's adjustment (Cole & Dennis, 1998; Grusec, Rudy, & Martini, 1997). Chao (2001) has identified a "training" style of parenting where support is demonstrated by involvement and investment rather than demonstrative affection, and where deference for authority and familial piety, can moderate the effects of high control and less autonomy. While an authoritative parenting style is associated positive outcomes across cultures adolescence (Amato & Fowler, 2002; Baumrind & Black, 1967; Darling, 1999; Maccoby & Martin, 1983; Mandara, 2006; Steinberg, 2001), other styles of parenting may be more normative in certain cultures and also associated with preferred or positive developmental outcomes (Chao, 2001; Deater-Deckard & Dodge, 1997; Landsford, et al., 2005; Lansford, Malone, Dodge, & Chang, 2008).

**Parenting in African American families.** A "no nonsense" style of parenting was identified among rural African American families (Brody & Flor, 1998). Competent parenting from the viewpoint of rural African American families consists of "involved, supportive and highly vigilant parenting, with frequent, bidirectional mother-child discussions" (Brody, Murry, Kim, & Brown, 2002, p.1507), which appears similar to European Americans perceptions of competent parenting except for higher emphasis on vigilance (Bogenschneider, Small, & Tsay, 1997). This type of parenting predicted self-regulation in middle school children which mediated child adjustment and aggression. Mandara (2006) identified an African American version of authoritative parenting that was somewhat stricter than authoritative parenting in European American families. Another analysis identified control, warmth, and anger as three dimensions identifying parenting styles in distressed adolescent African American single mothers (Weis, 2002). The types identified were authoritative, permissive, dismissive, and affectionate-

distressed. Compared to European American families, African American parents endorsed more severe punishment and worried about their children's future more (Pinderhughes, Dodge, Bates, & Zelli, 2000). Contrary to other findings, one study found reasoning to be the most common discipline tactic in a relatively well-educated sample of working-class and middle-class African American families, with three factors accounting for most of the variation in parenting (Bluestone & Tamis-LeMonda, 1999). These factors are a) use of material and social consequences, b) child-centered parenting including reasoning, responsiveness, and lack of physical punishment, and c) scolding.

Generally, African American parents are more directive and power assertive (Brody & Flor, 1998; Jackson-Newsom, et al., 2008; Mandara, 2006) but these characteristics may have different meanings and occur in culture-specific patterns and thus affect child outcomes differently than in middle-class European American families. Curvilinear relationships were found for the relationship of behavioral control to behavior problems in youth, varying on the level of peer problem behavior (Mason, Cauce, Gonzales, & Hiraga, 1996). Behavioral control, and in particular power-assertive control tactics, may be independent of taking the child's perspective among African Americans (M. L. Kelley, Power, & Wimbush, 1992; Mandara, 2006). Young African American adolescents' (mean age 11.7) perception of maternal warmth differs from that of European American adolescents in the context of a number of parenting practices (Jackson-Newsom, et al., 2008). Harsh discipline and negative affect in discipline were associated with less perceived warmth more for European Americans youth, while parent-alone decision making was marginally associated with greater perceptions of parental warmth for African American youth. Joint decision making was linked to greater perceptions of warmth only for European American youth and the association of higher monitoring with greater

perceptions of warmth was stronger for European American youth (Jackson-Newsom, et al., 2008). African American adolescents and their parents view parents as having legitimate authority to make rules regarding moral, conventional, prudential, friendship, and multi-faceted issues (Smetana, 2000). As they grew older, African American adolescents increasingly viewed personal issues as not legitimately under parental authority. Adolescents from upper income families took this view at younger ages than adolescents from middle-income families (Smetana, 2000).

## Development of Children's Autonomy and Social Competencies

### Early Development of Autonomy

From infancy on, children increase in the capacity to take initiative and perform self-directed action as their physical, communication and self-regulation skills improve. These early developmental processes are related to later social competence. For instance, the security of attachment originating in infancy is related to children's friendship formation in middle childhood (Freitag, Belsky, Grossmann, Grossmann, & Scheuerer-Englisch, 1996) and psychosocial development in early adolescence, including their ability to develop autonomy while maintaining connections with peers and fathers (Allen, Porter, McFarland, McElhaney, & Marsh, 2007). For young children the drive to engage in self-directed exploration and play and to communicate one's desires is strong. Erikson's influential theory of development contends the primary task of toddlerhood is to develop autonomy versus shame and the primary developmental task of the preschooler is to establish initiative (Erikson, 1963, 1982 in Shaffer, 2005). Autonomy support early in life encourages exploration and mastery motivation, yet maternal controlling behavior had no relationship to children's pride, shame, persistence or avoidance behaviors a year later (S. A. Kelley, Brownell, & Campbell, 2000). Autonomy

support aids the development of executive functioning (Bernier, Carlson, & Whipple, 2010). When mothers supported autonomy in two year olds, children were less likely to avoid a challenging task at three years of age (S. A. Kelley, et al., 2000). Parents of young children and other caregivers vary in their demands and directiveness and the degree and manner in which they allow or foster expressions of autonomy by responding generously to child- initiated requests (Kochanska, 1990). Parental values regarding expressions of autonomy vary by ethnicity and culture and age of the child (Harwood, 1992; Kochanska, 1990; Nucci, Camino, & Sapiro, 1996).

## Development of Social Competencies

During infancy, children develop initial social skills through responsive interactions with their primary caregivers (Kochanska & Aksan, 2004). With the gradual emergence of more sophisticated social skills, language, and cognitive development children move from a "parallel play" orientation with peers to genuine friendships and complex social and peer relationships (Parten,1932 in Shaffer, 2005). Self-regulation, temperament, autonomy, and language were related to competence with peers for low-income African American children (Mendez, Fantuzzo, & Cicchetti, 2002). Children's abilities in social and affective perspective-taking, persuasion, comforting, and listener-adaptation skills predicted peer acceptance in elementary grades (Burleson, Delia, & Applegate, 1992). The overall quality of the mother-child relationship was related to social adjustment in kindergarten (Pianta, Nimetz, & Bennett, 1997). Parental socialization strategies contribute to the development of social competence, although emerging evidence suggests that sometimes the effects of these strategies and socialization patterns may vary somewhat based on child temperament (Kochanska, 1993, 1995, 1997) and parental goals and values (Grusec, Goodnow, & Leon, 2000). The development of internalized conscience at

age six appears to be enhanced by socialization strategies that deemphasize power assertion, but only for children temperamental more fearful (Kochanska, 1991). A mutually responsive orientation (mutual warmth and responsiveness between mother and child) also is related to conscience development (Kochanska, 2002) and committed compliance (Kochanska & Aksan, 1995). Maternal power-assertive discipline strategies were also associated with less peer acceptance in first and fourth graders (Hart, Ladd, & Burleson, 1990) and controlling behaviors in parent-child discussions to peer rated aggression and positive sociability in fourth grade (McDowell, Kim, Robin, & Parke, 2002). Mother's reflection-supporting communication was predictive of these children's social skills and peer acceptance, but contrary to expectation, the child's skill mediated very little of the relationship between maternal communication and peer acceptance. Fifth grade children's friendship quality, likely reflecting skills in sustaining caring, mutual relationships, was predicted by the quality of relationships with parents, siblings and other family members (Franco & Levitt, 1998).

**Transition to Adolescence**

The transition from middle childhood to adolescence involves changes across many domains (Collins, Laursen, Mortensen, Luebker, & Ferreira, 1997; Eccles, 1999; Holmbeck, Paikoff, & Brooks-Gunn, 1995; Lerner & Galambos, 1998; Petersen, Leffert, & Graham, 1995). During middle childhood gains are made in self-confidence, identity, and orientation toward achievement (Eccles, 1999). However, these gains can be challenged during the transition to adolescence. The physical changes of puberty and the typical social and contextual changes of moving from elementary school to a more complex and often less personal middle school environment often overlap with a developmental push toward differentiation from one's parents that is in some ways similar to a toddler's push toward autonomy (Collins, Gleason, et al., 1997;

Eccles, 1999). Peer relationships become more important, but extreme orientation toward peers is related to more parental strictness and fewer opportunities to make decisions for oneself (Fuligni & Eccles, 1993). Adolescents desire more autonomy, and especially during mid-adolescence may differ from their parents in their expectations of behavior autonomy (Collins, Laursen, et al., 1997; Holmbeck & O'Donnell, 1991). Yet connection, support for autonomy and behavioral regulation (i.e. structural supports for desired behavior, monitoring) across home, peer and school contexts are all important during adolescence, each providing independent support of adolescent functioning (B. K. Barber & Olsen, 1997; Eccles, et al., 1997).

This convergence of contextual, cognitive and physical changes requires adjustment on the part of parents and their children (Collins, Gleason, et al., 1997; Steinberg & Morris, 2001). Increased conflict over everyday issues is common during this period, although major disruption in the parent-child relationship, wholesale rejection of parental values, and major turbulence is not (Collins, Laursen, et al., 1997; Gegas & Seff, 1990; Lerner & Galambos, 1998; Montemayor, 1983, 1986; Smetana, 1991). Youth and parents often perceive the quality of their relationship differently (Jackson-Newsom, et al., 2008; Keith, Huber, Griffin, & Villarruel, 2002; Paulson & Sputa, 1996). Discrepancies between parent and adolescents' (age 10-18) perceptions of who made decisions were associated with more conflict (Holmbeck & O'Donnell, 1991). Still, the early parent-child relationship lays the groundwork for the effectiveness of recommended parental practices at the transition to adolescence and beyond (Patrick, et al., 2005). Youth who are granted autonomy, but within parental limits and guidelines, tend to be better adjusted, with fewer externalizing and internalizing problems (Holmbeck & O'Donnell, 1991; Steinberg, 1990, 2001; Steinberg, Lamborn, Dornbusch, & Darling, 1992). Participation in youth programs may

facilitate the renegotiation of autonomy while maintaining connectedness (Larson, Pearce, Sullivan, & Jarrett, 2007).

## Parent-Child Communication

Social competencies develop in the context of the family and may be modeled and promoted through the process of parent-child communication (Morris, Silk et al. 2007). Positive parent-child communication is an important facilitator of positive development (Hillaker, 2004; Orthner, Jones-Sanpei, & Williamson, 2004; Williams, 2003). Communication is a key process by which disagreements are negotiated, and a healthy balance between cohesion and adaptability is maintained (Olson, 1993). Positive communication and warmth facilitate behavior management (Murry, Brody, Simons, Cutrona, & Gibbons, 2008) and were associated with higher self-regulation , while parental inattentive communication in fifth grade was predictive of poorer peer relationships and, along with harsh control, poorer psychosocial adjustment through middle school (Bronstein, et al., 1996). There are multiple aspects of parent-child communication that are salient during adolescence. Generally, self-disclosure is low, although youth perceive little change in communication with increasing age, including the perception that parents continue to dominate the conversations (Noller & Callan, 1990). For adolescents, tensions between privacy versus open boundaries, autonomy versus connection and interpersonal versus intergroup may characterize communication with parents (Williams, 2003). High levels of bidirectional communication and a high level of connection and acceptance correlate with later psychosocial maturity (Collins, Gleason, et al., 1997). A positive "balance of power" occurs with socially competent young children and their parents, where both parties accommodate and comply with each other, reinforcing positive communication patterns; whereas aggressive children behave coercively toward parents and parents indiscriminately reply to

coercive and positive exchanges (Dumas, et al., 1995; Patterson, 2002). Parent-child discussion quality predicted self-regulation which predicted aggressive behavior, delinquent behavior, and social and cognitive competence (Brody, et al., 2002). The quality of communication in a research setting distinguished families receiving clinical services from those not (Prinz, Foster, Kent, & O'Leary, 1979). When youth and their parents can discuss potential areas of disagreement in a positive manner, children approaching early adolescence are more inclined to adopt parental norms and values (Brody & Schaffer, 1982). Youth task persistence, classroom behavior, and self-regulation were related positively to parents elaborating on the early adolescents' comments in an interactive task (Hutt, et al., 2009). Good parent-child communication enhanced self-esteem and coping in early adolescence, reduced parent-child disagreement and enhanced youth's satisfaction with the family (S. Jackson, Bijstra, Leeuwe, & Bosma, 1998). This study found adolescents generally satisfied with parent-child communication, early adolescents more so than mid-adolescents. Confidently giving reasons for a position in a disagreement may be defined as an expression of autonomy (Allen, et al., 2002).

Studies highlight the importance of autonomy support in parent-child discussions at the brink of adolescence. In fourth grade (mean age 9.7) psychological control in parent-child discussion tasks (which undermines autonomy) is related to high levels of internalizing and externalizing when parental warmth is low (Caron, et al., 2006). In a parent-child disagreement discussion task, more negativity occurred at age 11 than in the same task two years earlier, along with declines in perspective taking, generating quality solutions and achieving resolution (Vuchinich, Angelelli, & Gatherum, 1996). Whether the parent or child selected the topic had a major influence on the quality of the discussion at age 11, but not two years earlier. If the child selected the topic, at age 11, they participated significantly more, were less negative and more

positive. This dynamic is consistent with processes and tensions described by Williams (2003) as characteristic of adolescent-parent communication, namely tensions between autonomy and connection, privacy and open boundaries, and inter-individual and intergroup communication. While disagreements, conflicting agendas and desires between parents and children occur frequently from infancy through adulthood, mid-adolescence tends to be the period at which parent-child disagreement peaks (S. Jackson, et al., 1998; Smetana, 1991). Adolescents tend to view parent-child communication less favorably than their mothers (Smetana, 1991) and to rate their general level of "getting along" higher than good communication more specifically (Hillaker, 2004; Smetana, 1991).

## Potential Risks and Moderators

### Aggression

It is common for young toddlers to be aggressive, but for most children increases in self-regulation, communication ability and social skills, result in a decline in aggression after about three years of age, such that by school age most children typically use other strategies to solve problem (Joussemet, et al., 2008). However, the normative decreases established by variable-centered research methods obscure the variability in trajectories of aggression from toddlerhood through middle childhood and beyond (Arsenio & NICHD, 2004; Campbell, Shaw, & Gilliom, 2000 McFadyen-Ketchum, Bates, Dodge, & Pettit, 1996; Nagin & Tremblay, 1999). Both temperamental characteristics such as a reactive temperament and parenting are associated with trajectories of aggression (Joussemet, et al., 2008). One study using a person-centered approach identified five trajectories or patterns of aggression through third grade—two low aggression groups, a group moderately aggressive at 24 months, but with steep declines thereafter; a moderate and stable aggression group and, the smallest group, a high and stable aggression group

(Arsenio & NICHD, 2004). Another study found four trajectories of aggression from age 6 through 12. Only 6 % of the children were in a high aggression group, whose aggression decreased slowly over time (Joussemet, et al., 2008). The trajectories of aggression differ by gender: for boys kindergarten through third grade, high coercion and low warmth predicted increasing aggression over early elementary years, while for girls that combination predicted a high, but decreasing trajectory of aggression (McFadyen-Ketchum, et al., 1996). In general, high family stress and harsh parenting are risk factors for high and stable levels of aggression, in addition to demographic factors such as low-income, single parenthood, low educational attainment, and having a teen mother, lower SES neighborhoods (Arsenio & NICHD, 2004; Kupersmidt, Griesler, DeRosier, Patterson, & Davis, 1995) and being a boy (Joussemet, et al., 2008). Controlling parenting, meaning the power assertive psychological control, the inverse of autonomy support, more than doubled the odds of being in the high aggression trajectory group compared to the low aggression group (Joussemet, et al., 2008). Maternal negative dominance is predictive of aggression and externalizing at two years of age, and interacts with gender and temperament. Maternal ineffective discipline at fourth grade predicted antisocial behavior over the course of middle school only for high tantrum boys (Stoolmiller, 2001). High aggression early in childhood predicts poorer peer relationships and school adjustment (Ladd & Burgess, 1999, 2001; Ladd, Kochenderfer, & Coleman, 1996). While these studies vary somewhat in number of trajectories identified, two consistencies emerge. First, there appears to be a small percentage of highly aggressive children for whom aggression remains a problem from toddlerhood onward. Secondly, dominating parental control appears to be related to a high trajectory of aggression.

**Dysregulatory Risk**

In a study upon which the current study draws heavily, Blandon, Calkins, and Keane (2010) propose that trajectories of aggression may be partially due to poor or maladaptive early regulation strategies. Their study combined standardized scores of adaptive regulation strategies (reverse coded), maladaptive regulation strategies, and toddler externalizing behaviors to create a risk composite. A similar combination of high toddler aggression and poor self-regulation is termed *dysregulatory risk* or simply *early dysregulation* in this study. Using hierarchical regression with their diverse sample (N= 253), Blandon and colleagues found toddler risk predicted negativity, emotion regulation, and peer acceptance, social skills, problem behaviors, social preference and aggression at age five. Maternal positive support and maternal control also interacted in predicting regulation at age five: Both high maternal control with low maternal positive support, and high maternal positive support with low maternal control, predicted higher regulation. Interestingly, parenting interacted with child risk in predicting negativity age five. High control predicted increased negativity for high-risk children, and lower negativity for low-risk children. This suggests high control has deleterious effects on less regulated, more aggressive young children, but positive effects on low-risk children. Likewise, Rubin, Hastings, XinYin, Stewart and McNichol (1998) found that aggression and externalizing in two year olds was predicted by emotion dysregulation. Poor effortful control exacerbated the effect of maternal negative dominance on externalizing behaviors for first and second graders (Morris, et al., 2002).

**Self-regulation**. While lack of self-regulation contributes to developmental difficulties, the healthy development of self-regulation, including regulation of emotions and effortful control, is an important part of the development of social skills and competencies (Eisenberg, et

al., 1995; Eisenberg, et al., 1997; Morris, Silk, Steinberg, Myers, & Robinson, 2007). The development of self-regulation is a complex and ongoing task, affected by temperament and parenting (Bocknek, Brophy-Herb, & Banerjee, 2009; Garner & Power, 1996; Kochanska, Coy, & Murray, 2001; Morris, et al., 2007; Rueda & Rothbart, 2009; Thompson, Lewis, & Calkins, 2008), with biological, neurological, and affective components (Cole, Martin, & Dennis, 2004; Hoeksma, Oosterlaan, & Schipper, 2004) that is necessary for adaptive functioning (Izard, Stark, Trentacosta, & Schultz, 2008). In one study, self-regulation in toddlers was enhanced by maternal sensitivity, mind mindedness and supports of autonomy, with support of autonomy being the largest predictor (Bernier, et al., 2010). In low-income samples of toddlers, emotion coaching and mental state language have been associated with increased effortful control (Brophy-Herb, 2009) and maternal supportiveness with emotion regulation (Bocknek, et al., 2009). Conversely, maltreatment is strongly associated with poor regulation patterns (Maughan & Cicchetti, 2002). By two years of age, toddlers are able to use multiple strategies of self-regulation including actively engaging with another attention diverting object, physical or symbolic self-soothing and searching for parent (Grolnick, Bridges, & Connell, 1996). By three and four years of age children are beginning to be able to verbalize strategies for dealing with negative emotions (Cole, Dennis, Smith-Simon, & Cohen, 2009). For preschoolers, inconsistent discipline was associated with less constructive emotion regulation strategies (Garner & Spears, 2000).

**Self-regulation and resiliency.** Self-regulation is a strong predictor of resilience in very low-income early adolescents, even after controlling for other predictors of resilience (Buckner, Mezzacappa, & Beardslee, 2003; Lengua, 2002). It affects children's development in many domains including peer relationships, academic performance, and resiliency (Eisenberg, et al.,

1996; Eisenberg, et al., 1997; Grolnick & Ryan, 1989; McDowell, et al., 2002). Conversely, dysregulation is associated with poorer peer relationships, operating independently and additively to aggression from late childhood through early adolescence (Pope & Bierman, 1999). The relationship of family processes to social, emotional, and academic competence and psychological adjustment in European American and African American children is mediated by self-regulation (Brody & Flor, 1998; Brody, et al., 2002; Eisenberg, et al., 2005; Steinberg, Elmen, & Mounts, 1989). In a sample of African American preschoolers that identified six child profiles based on patterns of autonomy, temperament, and emotion regulation, children in the three profiles of with higher autonomy and emotion regulation displayed more competent play interaction than less autonomous, dysregulated children (Mendez, et al., 2002).

**Other Contextual Risks and Moderators**

In addition to direct effects of parenting practices, the overall family environment affects children's development as well. Marital conflict has direct effects on younger children (ages 2-11) as well as effects mediated by parenting (Buehler & Gerard, 2002). Temperamental differences in vagal tone can moderate the negative effects of marital conflict (El-Sheikh, Harger, & Whitson, 2001). Evidence exists that the impact of poverty is at least partially mediated by parental depressed mood, interparental conflict, and the resulting poorer parenting practices (K. J. Conger, Reuter, & Conger, 2000; R. D. Conger, et al., 1992). Additionally, a study of African American families of 10- and 11-year-old children found racial discrimination also exacerbates the effects of poverty and stress on parenting (Murry, Brown, Brody, Cutrona, & Simons, 2001).

Risks of neighborhood, SES and family structure predict peer relationships and aggression, with middle SES neighborhoods being a protective factor (Kupersmidt, et al., 1995).

Self-regulation was protective against multiple risk factors in third through fifth grade children (Lengua, 2002). Warm and supportive parenting was also protective for African American adolescents (Vazsonyi, Pickering, & Bolland, 2006) and elementary-aged children (Dearing, 2004) living in dangerous neighborhoods. The effects of autonomy support and assertions of autonomy by adolescents have been shown to be moderated by neighborhood risk (McElhaney & Allen, 2001) and other factors. In low-risk neighborhoods, undermining adolescent autonomy was associated with poorer mother-adolescent relationship quality and poorer social functioning, while in high-risk neighborhoods, the reverse was true (McElhaney & Allen, 2001. There is some evidence that parental warmth and harsh discipline may vary by SES (Clark & Ladd, 2000; McLoyd, 1990; Pinderhughes, et al., 2000).

Additionally, adolescent autonomy expression for high-risk students was related to negative indices of social functioning, while the opposite relationship held true for low-risk students. High-risk students also asserted autonomy more. Joint parent-adolescent decision making was associated with positive outcomes across ethnicities and neighborhood contexts in an analysis of data from 1987 (Lamborn, et al., 1996). Among Asian American and Hispanic youth, unilateral parent decision making had no effect on adjustment, but for African American youth it was associated with academic competence and less deviancy. Even among middle-class African American youth, parent control had positive effect on adjustment. For European-American youth, however, unilateral parent decision-making predicted poorer psychosocial outcomes (Lamborn, et al., 1996). These results suggest more parental control and less autonomy support may be more beneficial, or at least less detrimental, for African Americans than European Americans. However, low warmth combined with low control is associated with the

poorest outcomes for European American and African American youth (Pittman & Chase-Lansdale, 2001)

For African American elementary age children living in dangerous neighborhoods, valuing restrictive parenting was a protective factor for academic achievement, while the opposite was true for European Americans (Dearing, 2004). As the children grew older, the protective effects of restrictive parenting for African American children diminished. Scholars have speculated that differences in effects of more authoritarian parenting on child outcomes may be because African American parents are motivated by the necessity of protecting children from neighborhood risk or increased risks due to minority status (Dearing, 2004; Gonzales, et al, 1996, Jarrett, 1999). Thus, for African American families with preadolescent children, parenting that is more restrictive of autonomy may have beneficial effects for children, although it is not known if there are beneficial effects on social competence in particular.

**Summary**

Critical gaps in our understanding of the relationship of autonomy support to the development of social competence in late childhood remain. Summarizing the literature review, a) scant evidence links autonomy support independently to social competence and mostly in adolescence, although there is considerable evidence linking autonomy support to general and social competence when autonomy support is part of an authoritative parenting style, b) approaches to parenting that de-emphasize autonomy appear to be less detrimental in African American families, and c) children's self-regulation and aggression, or lack thereof, seems related to social competence across age groups. Dysregulatory risk interacted with parental supportiveness and control in predicting social competence for five year olds in one recent study (Blandon et al, 2010), but extant research does not address whether dysregulatory risk might

interact with autonomy support. This study expands upon that research, extending a similar model to an older age group and examining autonomy support rather than control. Fifth grade is a key time for examining autonomy support in parent-child problem solving discussions and relating that autonomy support to social competence. Autonomy support becomes more salient to the quality of parent-child relationships during the transition to adolescence and at the same time peer social competence becomes more important to youth.

# CHAPTER THREE: METHODOLOGY

The goal of this study was to gain understanding of the relationship of parental autonomy support to social competence in low-income fifth grade children. Autonomy support was measured in the context of video-recorded parent-child discussions of issues over which the parent and child had disagreement or conflict. Two potential moderators of that relationship, early dysregulatory risk and race, were included as potential moderators in the analysis**.**

## Participants

The participants in this study were originally recruited as part of the Early Head Start Research and Evaluation (EHSRE) Project (Love, 2005) between 1996 and 2001. For that study, starting in 1996, 3001 participants from 17 sites across the nation were selected and randomly assigned to the Early Head Start intervention or a control group (Love, et al., 2005; West, et al., 2010). Eligible families had to have a child less than 12 months of age or pregnant mother. At least 90% of the participants were required to be at or below the poverty line. Data collection methods included an in-home oral interview with the primary caregiver (99% of whom were mothers), observation of the caregiver-child interactions and direct assessment of the child.

After EHSRE enrollment, follow-up data was collected near children's 14, 24, and 36 month birthdays. Follow-up studies were conducted at the transition to kindergarten and at fifth grade. For the fifth grade wave, 2,701 children and families were active in the study and eligible to participate. The data for this wave of the study were collected between 2007 and 2009. This wave is called the fifth grade follow-up because it was timed to coincide with the children being in fifth grade, although a small minority of the children for various reasons may not have actually been in fifth grade at that point. However, for the sake of simplicity and convenience the children in this wave of the study will all be referred to as fifth graders. Approximately 37% of

the children were in fifth grade in 2007, 48% in 2008, and 15% in 2009. A more detailed analysis of the final fifth grade sample, attrition, patterns of missing data and the method selected for handling missing data will be presented later in this chapter.

## Procedures

The procedures for the study are detailed in the *Early Head Start fifth-Grade Follow-up User's Guide* (West, et al., 2010). Participants in the EHSRE study were contacted by mail. The letter informed the family that the parent would receive $30 for participating and the child would receive $10. Home visits lasting an average of three to three-and-a-half hours were scheduled when the fifth grade child was not in school. Informed consent was obtained. The visit consisted of direct child assessment, child interview, interaction task, parent interview and home observation. This study utilized data from the child interview lasting about 10 minutes, the parent interview (lasting about 55 minutes) and the parent-child discussion task described below.

The parent and child were asked to select areas of disagreement (such as chores or getting along with siblings) from a stack of cards and to discuss and work toward solutions of these problems for the allotted time of eight minutes. Each of the sixteen cards had a potential area of parent-child disagreement such as TV, video games, homework, chores, and fighting with brother or sister (West, et al., 2010). This was based on the Parent-Child Discussion Task used in the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care (SECC) for the fifth grade wave (West, et al., 2010).

The recorded data were subsequently coded for positive regard, negative regard, respect for autonomy, engagement, dominance, use of reason, use of coercion, mutuality of dyad, and competitiveness of dyad by a team of coders at Columbia University (West, et al. 2010).

Coders' initial reliability was assessed by comparing their scores on each of the six scales with those assigned by the gold-standard coder. A coder's score on any given scale was considered reliable if it agreed with the gold-standard's score within 1 point. A coder was required to reach 85percent reliability on all scales across 40 practice videos to achieve initial reliability. Once coders achieved initial reliability, 15 percent of their weekly coding assignments were double-scored by the gold-standard coder in order to assess ongoing reliability. A total of 80 videos were double-scored. All coders consistently maintained a reliability score of 85 percent or higher. Coders met once weekly with the gold-standard coder to discuss difficult cases and resolve areas of disagreement (West, et al. 2010).

## Measures

### Independent Variables

**Preliminary examination of the autonomy support construct**. As this study utilized secondary data from the EHSRE study, several options were available to assess maternal autonomy support: create a measure of autonomy support and code the parent-child interactions from the digital audio-video recordings, create a composite measure using existing items coded from the digital audio-video recordings or to use a measure of respect for autonomy included in the national data set. This variable of respect for autonomy in the national data set measured parental interest in hearing the child's opinion, considering and validating the child's perspective and willingness to negotiate with the child (West et al., 2010, p.56). However, this measure was not used because interest and validation may be confounded with or overlap with maternal warmth and supportiveness (cf. Clark & Ladd, 2000). A construct consisting of supportiveness, warmth and responsiveness is generally conceived of as a construct distinct from autonomy support in the parenting style literature. Additionally, negotiation arguably could include

wheedling, parental capitulation under pressure or other less constructive interactions not clearly associated with autonomy support. With the goal of capturing clear, observable behavioral manifestations of autonomy support that are distinguishable from parental behavioral control and parental warmth, the remaining two options were considered. The researcher practiced coding the parent-child discussion task using a pilot measure created for the purpose. This measure operationalized autonomy support as a composite of parent versus child control of the topic cards, parental requests for child input, child input, and parent directiveness, recorded at one minute intervals. The national data set, for which the videos were not all available to the researcher, had five similar items: who picks topic, the child proposes a solution or compromise, parent takes topic cards from the child, who decides when to move on to the next topic, and does the parent interrupt when the data collector asks the child to describe the solutions arrived at from their discussion. Both measures were very similar and deemed *a priori* to have face validity and to capture the construct of autonomy support as defined and conceptualized for this study, so they were compared on a small sample of the digital recordings of the available from the local study site. Every tenth video was coded for autonomy support by the researcher in order to pilot the measure of autonomy support originally conceptualized for this study, then rankings were compared with the composite measure created from the five items from the national data set. Both measures yielded approximately the same rank order on autonomy support, and captured the construct of autonomy support as intended by the researcher. However, the using the national data set measures had several advantages over the pilot measure. First, because the national data set had 2,105 African American and European American families instead of the estimated sample size of about 250 that could be coded for the current study, the power for detecting effects with a larger sample was deemed a significant advantage.

Additionally, with cases from 17 sites instead of the 2 for which digital recordings would have been obtainable, the results would be more nationally representative. Also, reliably coding the degree of child input-minute-by-minute with the initial measure proved difficult, so using the national measure items which were more clear-cut and for which reliability had already been established was another advantage. For these reasons, the new measure created using the EHSRE national data study variables, as described below, was selected instead of the pilot measure.

**Autonomy support.** Five items from the Videotaped Parent-Child Interaction Coding Form were used to create a measure of autonomy support. For this study, each item was scored 0, .5 or 1, with indicators of parent control/autonomy suppression scored 0 and indicators of autonomy support and child initiative scored 1 and if both parent and child engaged in the behavior, the item was scored .5. The scores on each of the five items were averaged to create an autonomy support score with a potential range of 0 to 1. The following are the checklist items and the response codes used for this study.

- Parent takes "Family Issues" cards out of child's hands (Recoded to *Yes* = 0*, No* = 1)
- Child proposes one or more solutions or compromises to a disagreement? (*Yes* = 1*, No* = 0)
- Parent interrupts when data collector asks child, "Can you tell me how you resolved some of your differences?" (Reverse coded to *Yes* = 0*, No* = 1)
- Who picks topics of disagreement? ( Recoded to *Parent* = 0*, Child* =1*, Both* = .5)
- Who decides when to move on to the next area of disagreement? (Recoded to *Child* = 1, *Both* = .5, *Parent* = 0)

**Early Dysregulation.** High levels of dysregulation and aggression early in life may pose a risk for ongoing maladaptation (Arsenio & NICHD, 2004; Campbell, Shaw, & Gilliom, 2000). This variable, referred to here as *early dysregulation* or *dysregulatory risk* (in keeping with Blandon et al., 2010) was created as a composite of aggression and emotion regulation reverse-coded. The Bayley Behavior Rating Scales (BBRS, Bayley, 1993) emotion regulation total scores at 24 and 36 months, reversed coded, were used in the composite as the assessment of lack of emotion regulation (author's reliability .88). The BBRS was a direct-assessment measure of observed child test-taking behaviors. Because the emotion regulation scores were an average of 7 items, each on a five point scale, the values for emotion regulation ranged from 1.0, 1.14, 1.29, 1.43, and so on, up to 4.71, 4.86, 5.00. Therefore, because reverse coding each individual score value would have been cumbersome, reverse coding was accomplished by first standardizing the variable to a mean of zero and a standard deviation of 1, then reversing the sign by multiplying by -1.00 (Anglim, 2009). In that manner, highest scores on emotion regulation would equate to lowest scores on dysregulation, so that a standardized score on emotion regulation of 1 (one standard deviation above the mean) would be recoded as -1 for dysregulation, one standard deviation below the mean.

The aggression subscale from the Child Behavior Checklist, long version (CBCL, Achenbach & Rescorla, 2001) for 24 and 36 months was used in the composite. It has scores from 0 to 62 and is comprised of parent-reported child behaviors such as *child has temper tantrums*, *child hits others*, and *child is easily frustrated*. The parent was asked if the child exhibits the behaviors *often, sometimes*, or *never*, and a total score ranging from 0 (*never* for each behavior) to 62 (*often* for each behavior) was tabulated. The aggression scales of the 24 and 36 month CBCL were standardized as well. The dysregulation score was computed as the mean

of the 24 and 36 month reverse coded emotion regulation and the 24 and 36 month standardized CBCL. This computed average of the all four of the just mentioned standardized variables was also standardized to become the master composite early dysregulation variable. This measure is similar to Blandon et al.'s (2010) measure of risk, but used a different toddler measure for emotion regulation.

**Control Variables**

**Child characteristics.** Child gender was controlled for using a dummy variable, Focus Child is Male, where male was coded 1 and female coded 0. Male children frequently have lower scores on measures of social competence (Garner, Diane Carlson, & Miner, 1994; Hillaker, 2004). Child age, as reported by the child, was also included as a control variable.

**Initial maternal demographic risks**. A maternal risk variable, indicating the baseline number of risks, was used as a control. The number of risks factors a family has been shown to have a cumulative effect on child outcomes (Appleyard, Egeland, van Dulmen, & Alan Sroufe, 2005). The presence of being a welfare recipient, lacking a high school diploma, being less than 20 years old at birth of first child, unemployment, and single parenthood were coded 1 and scores summed yielding a cumulative maternal risk score indicating the number of risks from zero to five.

**Maternal education at fifth grade wave.** Maternal education level was coded so that attainment of less than a high school education was scored 1, a high school diploma or GED was scored 2, some post high school vocational or college education was scored 3, a bachelor's

degree was scored 4, and anything beyond a bachelor's degree was scored 5. The mean education level for the final pooled sample was 2.9 pooled (*SD* for original data = .96)[2].

**Fifth grade family functioning**. The Family Environment Scale (FES, Moos & Moos, 2002 was included in the analysis to control for family environment influences on social competence. The FES has items such as *We often criticize each other* and *We sometimes hit each other*, with a four point response scale *strongly agree* (1), *mildly agree* (2), *mildly disagree* (3), and *strongly disagree* (4). Positive Regard is an observational measure developed for the EHSRE study (West, et al., 2010) that assessed maternal affection and warmth, expressed verbally and nonverbally in the parent-child discussion task. In this study it was called warmth and controlled for the tone of the discussion as influenced by maternal warmth and affection. The fifth grade child's perception of relationship with mother from the Self Description Questionnaire (SDQ, Marsh, 1990) was also used as a child-reported family measure and to control for potential effects autonomy support that are due to its effects on perceptions of mother-child relationship quality.

**Dependent Variables**

Two measures of social competence were used—the Cooperation and Self-Control subscales of the Social Skills Rating System (SSRS, Gresham & Elliot, 1990). The SSRS Cooperation and Self-Control data were collected by teachers. The alpha's for Social Skills subscales ranged from .93 to .94 with a test-retest reliability of .85. The psychometric properties

[2] Standard deviations, the deviations from the mean for a particular data set (Streiner, 1996) are computed for each imputed data set, but standard deviations are not averaged to give a pooled *SD* in SPSS.

established in the NICHD Study of Early Child Care and Youth Development (SEECCYD) found an alpha for Cooperation subscale of .79 and for the Self-Control subscale of .81.

**Final Variable Selection**

In order to obtain results from the subsample of participants with complete data, the list of variables used for the analysis was altered slightly from the original plan to increase the power available for detecting significant predictors of outcome variables, while maintaining the integrity of the study. The variables for program participation and the children's report of their quality relationships with their fathers were not used. Program participation had no correlation with teacher-reported self-control ($r$ = .01) or cooperation ($r$ = .00) in the fifth grade. Since the study included only mothers or female respondents and the video-taped interaction was between the child and this respondent, the children's perceptions of their relationship with their mothers (but not fathers) were included in the final analysis. Controlling for education level and needs-to-income ratio at the fifth grade wave, in addition to controlling for the initial numbers of maternal risks was employed to better adjust for changes that may have occurred during the intervening years. Likewise, as the study hypothesized differences in autonomy support as a reflection of community norms and differences in child dysregulation, not as an effect of family level conflict, the early measure of family conflict was eliminated, leaving the fifth-grade report of family conflict to control for its potential effect on the quality of the current relationships within the family and any relationships to current social competence expressed at school.

**Missing Data Analysis**

**Attrition**

As with most large, longitudinal studies and research in the social and behavioral sciences in general (Enders, 2010) missing data and attrition were problems with the EHSRE

study. Thus, examining patterns of missingness and appropriately accounting for missing data is necessary in order to obtain the most accurate estimates and conclusions (Enders, 2010). The initial wave of the EHSRE study had 3,001 participants selected for inclusion in the study, randomly assigned to the program group or a control group. Of these, 300 never participated at all and no data were obtained. Out of the remaining 2,701 sample members eligible for participation in the fifth grade wave, fifth grade data was obtained from 1,632 respondents. This study examined only African American and European American families for whom the study respondent was female—1,125 participants. Percentages of missingness in the following paragraphs or tables refer to percentages for these 1,125 these participants unless otherwise specified. Parent, child, and teacher data were collected, but only 522 families had both video discussion task data and teacher-reported data. Even more than attrition—loss of families who for one reason or another do not participate in subsequent waves of a longitudinal study—missing data on individual items or certain portions of the data creates challenges for data analysis and interpretation. Only 168 participants had complete data for all variables ultimately utilized in the current study, and only 112 would have had complete data if program status, relationship with father, and 24 and 36 month family conflict had also been included as control variables.

**Missingness for Study Variables**

For this sample of 1,125, almost all (1,124) had parent interview data (See Table 1); 95% (1073) had child assessment and child survey data. Video data were missing for 174 participants, 15.5% of the cases. There were complete data for fifth grade family conflict and child gender for 1124 participants. Income-to-needs ratio data were missing for 11.6% of cases ($N$ = 130). The child's perception of relationship to mother had 123 or 11.4% missing, and

parental warmth in the parent-child discussion task had 176 or 15.6% missing. Because dysregulation was a composite variable of four measures at two timepoints, missingness accrued from four sources—only 663 (58.9%) of the cases had the Child Behavior Checklist aggression subscale data and the BBRS emotion regulation data for both the 24 and 36 month timepoints. In other words, 41.1% had missing data on at least one of the component variables used in constructing the dysregulation variable. At the 24 month timepoint, 250 (22.2%) had missing data for emotion regulation and 16.7% had missing data for the Achenbach Child Behavior Checklist, long version aggression subscale, and 25.2% had missing data on one or the other. At the 36 month timepoint, 27.0% had missing data on the BBRS emotion regulation scale and 18.4% had missing data on the Achenbach Child Behavior Checklist, long version, aggression subscale, and 30.7% had missing data on one or the other.

The most common patterns of missingness, aside from missing both parental warmth and autonomy support because the video data were missing, were 42 cases missing the 24 month emotion regulation and the 24 month CBCL, 53 missing just the 36 month emotion regulation, 53 missing the 36 month emotion regulation and the 36 month CBCL, and 36 missing all the 24 and 36 month emotion regulation and CBCL data. Race, program status, fifth grade conflict, and child gender had complete or 99% complete data so patterns of missingness will not be presented for these variables. Table 1 shows the percentage missing for each study variable, or item used in computing a study variable.

Table 1
*Percent Missing and Complete for Study Variables*

| Variable | Percent complete data | *n* with complete data | Percent missing |
|---|---|---|---|
| Race | 100.0 | 1125 | 0.0 |

Table 1 (cont'd)

| | | | |
|---|---|---|---|
| G5 child self-reported age | 95.1 | 1070 | 4.9 |
| Parental education level | 94.0 | 1058 | 6.0 |
| Maternal risk | 91.3 | 1027 | 8.7 |
| G5 Income-to-needs ratio | 97.2 | 1094 | 2.8 |
| Dysregulation | 58.9 | 663 | 41.1 |
| 24m aggression- CBCL | 83.3 | 937 | 16.7 |
| 24m emotion regulation-BBRS | 77.8 | 875 | 22.2 |
| 36m aggression | 81.6 | 918 | 18.4 |
| 36m emotion regulation | 73.0 | 821 | 27.0 |
| G5 Relationship with mother | 88.6 | 997 | 11.4 |
| G5 Maternal warmth (video) | 84.4 | 949 | 15.6 |
| G5 family conflict | 99.9 | 1124 | 0.01 |
| G5 Autonomy support | 58.6 | 657 | 41.4 |
| Who decides topic | 83.4 | 937 | 16.6 |
| Who decides when to change topics | 83.2 | 935 | 16.8 |
| Parent does not take topic cards from child | 74.7 | 840 | 25.3 |
| Parent does not interrupt last question | 69.9 | 786 | 30.1 |
| Child proposes solution or compromise | 80.4 | 905 | 19.6 |
| G5 Teacher-Reported Child Outcomes | 21.9 | 547 | 78.10 |
| G5 Teacher report child self-control | 49.3 | 555 | 50.7 |
| G5 Teacher report child cooperation | 51.5 | 579 | 48.5 |

*Note:* Percentages are of the 1125 African American and European American cases with female respondents who participated in the fifth grade wave. G5 = grade 5

**Missing data from parent-child discussion video.** Out of 950 cases with video data, 68 were identified as missing/uncodable for all measures of related to the discussion task (7% of cases with some video data). Problems with the camera or quality of the DVD accounted for 58 of the 68 uncodable items. In addition, for some participants, some of the autonomy support items were

identified as uncodable while others were able to be coded, with problems with the camera or DVD accounting for 119 of the uncodable case. Overall, each autonomy item had from 20 to 30% missing—the portion identified as "uncodable" plus varying amounts of missing labeled "missing/blank" or "missing/not valid." Missingness for the autonomy items due to inability to code the item ranged from 20.6% to 7.1%. For Child Proposes a Solution 113 (10%) were uncodable; for Parent Takes Topic Cards, 15.8%; Parent Interrupts Child on the Last Question, 20.6%; for Who Picks Topics, 7.1%; for Who Decides When to Move on to Next Topic 7.3%. The cases with no data for any of the autonomy items did not appear to be systematically different from the sample as a whole in terms of racial composition (50% African American, 50% European American), although their income-to-needs ratio was higher (1.8 compared to 1.5). However, those cases without data on autonomy items were more likely to be also missing data on outcome variables. For this group, 69% were missing teacher report data on cooperation and self-control compared with 49% and 51% for the data set as a whole. The probable reason for the missingness becomes apparent when examined along with parental warmth or positivity toward child, coded from the same video interaction. For parental warmth during the video recorded parent-child discussion session, almost all missingness (except for one case which was uncodable) was due to a missing section of the study. For all the cases for which the section was missing, the autonomy support items were coded either "missing/invalid" or "uncodable/invalid"—probably indicating missingness due to error, possibly systematic error, on the part of the research team rather than characteristics of the participants.

**Missingness on outcome variables**. The variables with the most missing data were the outcome variables. Cooperation and self-control had 49% and 51% missing, respectively. Thus, further examination of missingness will concentrate on the outcome variables—teacher-reported

cooperation and self-control. The teachers' report response rate was low, in part, because during round one the necessary prior school district and principal permission was not obtained before the end of the school year. Most of the missingness is due to teachers not completing the Social Skills Rating Scale. For self-control, 2.8% were identified as missing/invalid, 47.8% were coded "missing section." The same cases were also coded "missing section" for cooperation. For cooperation only 1.2% of the data were missing/invalid. On average, the portion of the sample with teacher report data for cooperation and self-control was had higher percentage of European American and female children, lower early dysregulation, higher autonomy support, but less parental warmth, more family conflict, and lower quality perceived relationship with mother and lower-income-to-needs ratio. Independent sample *t*-tests, however, indicate significant differences only for child gender $t(1122) = -2.9$, $p < .004$, child perception of relationship to mother, $t(995)$, $p < .001$, child age, $t(1068) = -2.49$, $p = .013$ and differences for dysregulation that approached significance, $t(661) = -1.72$, $p = .086$. (The *t*-test results are reported for has/does-not-have teacher-reported cooperation groups. The results comparing means for has or does-not-have teacher report self-control data is very similar.)

**Nature of the Missingness**

If data missingness is completely random, meaning that no other variables known or unknown are associated with the missingness, the only problem caused by the missingness is the loss of statistical power to detect differences or relationships that are present in the population. However, data with missingness that is systematically related to other variables cannot be ignored or deleted listwise without producing biased results and inaccurate parameter estimates due to non-representative sampling (Enders, 2010). Thus examining potential causes and correlates of missingness is necessary to inform decisions about how or whether to impute and

guide interpretation of analysis results. For those reasons, the following information on correlates of missingness and differences between the sets of cases with and without complete data is presented. When data is missing completely at random (MCAR, Rubin, 1976 in Enders, 2010), there should not be mean differences between the set of cases with missing data and the set without missing data. If the data is missing, but the reasons or causes of the missingness are observable and due to other variables in the analysis model, but not to an aspect of the missing variable itself, Rubin's (1976) terminology is to label it missing at random (MAR). If the correlates of the missingness are known and are incorporated into the imputation process, imputing data that is MAR attenuates the bias and error that is inherent in ignoring missing MAR data. Data may also be missing not a random (MNAR), meaning the missingness is related to the variable itself---if clinically depressed patients were more likely not to complete the test for depression, for example. Comparing the cases without missingness to the cases with missing data on one or more variables can identify whether missingness may be MCAR (there are no significant mean differences associated with missingness) or identify variables which are associated with systematic differences in patterns of missingness. Table 2 presents the means and standard deviations for study variables for the cases without missing data and those with missing data on one or more study variables.

Table 2
*Variable Means or Percentages for All Study Participants, Cases without Missingness, and Cases with Missingness on One or More Study Variables*

| | All Fifth Grade Wave African American and European American Female Respondents (Maximum $N = 1125$) | Cases with Complete Data for All Variables ($N = 247$) | Cases with Missingness on One or More Variables |
|---|---|---|---|

Table 2 (cont'd)

| | *n* | *M* or Percent | *SD* | *M* or Percent | *SD* | *n* | *M* or Percent | *SD* |
|---|---|---|---|---|---|---|---|---|
| Focus Child is Male | 1124 | 49.2% | -- | 42% | -- | 878 | 51% | -- |
| Child's age (reported) | 1070 | 10.58 | .50 | 10.50 | .50 | 824 | 10.60 | .50 |
| African American | 1125 | 47.4% | -- | 35% | -- | 879 | 51% | -- |
| European American | | 52.6% | -- | 65% | -- | | 49% | -- |
| Relationship with mother | 997 | 3.57 | .43 | 3.54 | .44 | 751 | 3.58 | .42 |
| G5 Maternal warmth | 949 | 4.77 | 1.26 | 4.79 | 1.33 | 703 | 4.76 | 1.24 |
| G5 family conflict | 1124 | 1.43 | .45 | 1.45 | .45 | 878 | 1.42 | .45 |
| G5 Income to needs ratio | 1094 | 1.60 | 1.38 | 1.53 | 1.21 | 848 | 1.62 | 1.43 |
| G5 education level | 1058 | 2.60 | .93 | 2.64 | .87 | 812 | 2.58 | .95 |
| In program group-- | 1124 | 51.9% | -- | 57% | -- | 878 | 50.4% | -- |
| Dysregulation (from complete data) | 663 | -.01 | .66 | -.09 | .63 | 417 | .03 | .67 |
| Autonomy support | 902 | .54 | .23 | .55 | .23 | 656 | .54 | .23 |
| 24m Emotional Regulation | 875 | 3.65 | .80 | 3.71 | .74 | 629 | 3.62 | .82 |
| 24m Aggression (cbcl) | 937 | 21.16 | 10.36 | 20.31 | 9.92 | 691 | 21.47 | 10.51 |
| 36m Emotional Regulation | 821 | 3.98 | .74 | 4.06 | .68 | 575 | 3.95 | .76 |
| 36m Aggression (cbcl) | 918 | 19.02 | 10.81 | 18.08 | 9.91 | 918 | 19.02 | 10.81 |
| Self-control | 555 | 1.43 | .49 | 1.51 | .47 | 309 | 1.37 | .49 |
| Cooperation | 579 | 1.41 | .44 | 1.44 | .43 | 333 | 1.40 | .44 |

**Sample without missingness differs significantly.** Independent *t*-tests were conducted comparing the means of each study variable for the cases without missing data to the mean of each study variable for the entire sample. *T*-tests indicated significant differences for child gender, $t(1122) = -2.6$, $p = .01$; race, $t(1123) = -4.3$, $p < .001$, child age, $t(1068) = -2.80$, $p = .01$, self-control, $t(553) = 3.20$, $p = .001$, dysregulation, $t(661) = -2.32$, $p = .02$, and 36 month emotional regulation, $t(819) = 2.00$, $p = .04$. Also the full sample group had significantly more problems with the DVD making it uncodable, $t(1016) = 2.69$, $p = .007$. In addition, checking for differences in some auxiliary variables that might predict missingness, there are significant negative correlations, for instance, between having 36-month Child Behavior Check List data, aggression subscale data and 24-month parental distress data ( $r = -.092$, $p < .01$), 36-month parental distress ($r = -.108$, $p < .01$) and 36-month parental depression (-.082, $p < .05$). These variables were not significantly correlated with missingness on 24-month emotion regulation data or CBCL aggression data or 36-month emotion regulation data. There may be other variables (out of the thousands of variables in the EHSRE study) significantly correlated with the presence or absence of data on study variables. However, these differences suffice to demonstrate that missingness is not MCAR.

**Differences between samples with or without missingness by gender**. Since the focus child was male for significantly fewer participating families with complete data, the means on primary study variables between the sample with missing data and the sample without missing data were compared by gender using independent sample *t*-tests. See Table 3. For males no significant differences were found on means for autonomy support, dysregulation, self-control, or cooperation. For females independent sample *t*-tests indicated scores for the primary study

variables differed significantly for self-control, $t(301) = -2.83$, $p = .005$ and dysregulation $t(327) = 2.00$ $p = .47$. For females with missing data, the mean self-control score was 1.46, $SE = .04$. For females without missing data, mean self-control was 1.60, $SE = .04$. The effect size here is small, $r = .16$. The dysregulation mean for the females without missing data was -0.21, $SE = .05$, for the females with missing data the mean was -0.07, SE = .05. The effect size of the difference is small, $r = .11$.

Table 3
*Comparing Means on Study Variables by Gender for Cases With and Without Missing Data*

| Gender | | Autonomy Support | Dysregulation | Cooperation | Self-Control |
|---|---|---|---|---|---|
| Females | | | | | |
| | cases with missing data | 1.11<br>$N = 234$ | -.07<br>$N = 195$ | 1.52<br>$N = 175$ | 1.46<br>$N = 160$ |
| | cases without missing data | 1.11<br>$N = 111$ | -.20<br>$N = 143$ | 1.57<br>$N = 143$ | 1.60<br>$N = 143$ |
| Males | | | | | |
| | with missing data | 1.10<br>$N = 241$ | . 13<br>$N = 222$ | 1.26<br>$N = 158$ | 1.28<br>$N = 149$ |
| | without missing data | 1.13<br>$N = 72$ | .07<br>$N = 103$ | 1.26<br>$N = 103$ | 1.37<br>$N = 103$ |

**Imputing Missing Data**

The goal of data analysis in a research study is to produce a parameter estimates that provide a non-biased estimate of the relationship between study variables. The approach to handling missing data, a chronic problem in social science research and in longitudinal studies in particular (Enders, 2010), substantially affects the generalizability of the study results and the degree of bias or error in the conclusions. Because, as the previous missing data analysis shows,

there are systematic differences between the portion of the sample without missingness and that with missingness, analyses based on complete cases only will contain bias and not be representative of the sample or the population as a whole (Enders, 2010). So while, analyses were done for complete cases only in this study and will be summarized later as a point of information, those results cannot be taken as unbiased or representative.

**Best imputation methods**. Evidence that missing data in this sample was MAR presents a strong case for imputing data with one of the advanced statistical methods which assume data is MAR (Enders, 2010). Generally, maximum likelihood methods and multiple imputation are considered the "state of the art" methods for dealing with missing data (Schafer and Graham, 2002, in Enders, 2010). Using a multiple imputation method is superior to a single imputation (IBM, 2010). These methods increase statistical power and reduce bias and produce results superior to listwise, pairwise, regression, or other options for handling missing data. Multiple imputation was chosen for the analyses for this study. (Expectation Maximization was also attempted, but failed to converge when attempted with the large number of auxiliary variables include in the multiple imputation process described below.) In some cases, multiple imputation has advantages over maximum likelihood estimation in that auxiliary variables, variables that may relate to missingness, are easily incorporated into the imputation phase and then are not needed in subsequent analyses. It also makes no difference whether the imputed variables are dependent or independent variables in subsequent analyses (Enders, 2010, p. 337). Maximum likelihood methods have an advantage in detecting interactions or moderations if the software used accommodates missing data on predictor variables and use of maximum likelihood in the analysis. SPSS uses Expectation Maximization (EM), a maximum likelihood method that estimates best-fitting covariance matrices. However, to run subsequent analyses in SPSS, the

data must be filled in to new data set using regression imputation and thus retains the disadvantages of imputation by regression and will underestimate parameter values (Enders, 2010; IBM, 2010). The description of the multiple imputation process used for this study is described below.

**Multiple imputation**. Multiple imputation is a three-step process: imputation, analyses, and pooling (Enders, 2010). Conceptually, the imputation step uses a set of regression equations using observed data to estimate missing data, then adds in a normally distributed residual term to add variability. The imputed data set from the first imputation is used as the starting place for imputing another data set after random residual terms have been added. This process is repeated multiple times, creating a given number of unique imputed data sets. Analyses are run for all imputed data sets and the pooled results are taken as the most accurate estimate of study parameters. Limits for the number of data sets created may be determined by the capabilities of the software. While 20 or more iterations is preferable (Graham, Olchowski, and Gilreath, 2007, in Enders, 2010), the SPSS default is 5 and 16 iterations was the maximum that could be obtained for this study given the size and complexity of the analyses. Some sources say little is gained with more than 3-10 imputations (Schafer,1999). Including crucial variables as auxiliary variables and including study variables is important for the imputation process and can affect results. Using a large number of variables is a recommended strategy (Enders, 2010, p. 201).

The first step in the process for this study was to select variables for the imputation. From a master data set of well over 1,000 EHSRE study variables, variables were eliminated on the basis of redundancy or being string variables, and chosen for likely association with either missingness or study variables. A data set with 531 variables from all waves of the EHSRE study was created for the imputation process. Variables included child measures such as other

measures of attention, aggression, and social competence, parent measures such as depression, parenting stress index, marital status, income, race, and teacher/school measures, site code and program status. All study variables were included and missing data imputed. The imputation process in SPSS repeats iterations until the specified number of imputed data sets are created. When further analyses such as regression or computing descriptive means are subsequently done, SPSS can be instructed to pool the data sets for the analyses. The following descriptives include the pooled, imputed data.

**Description of the Sample**

The sample of all European American and African American participants in the fifth grade wave was 52 % European American ($N = 592$) and 48% African American *(*$N = 533$). About half, 51.9% ($N = 583$) had participated in Early Head Start. The target children were 49.2% male ($N = 553$) and 50.8% ($N = 571$) female. The mean education level score, 2.6 indicates the average education level is between a high school diploma (scored 2) and some college or post-high school training (scored 3). A few had college degrees—17 with a bachelor's degree and 8 with graduate work past a bachelor's degree. There were 447 10-year-olds, 618 11-year-olds, 3 9-year-olds, and 2 12-year-olds, mean age 10.58 years. More than half had three or more of the maternal risk factors: welfare status, unemployment, single parenthood, teen birth, and no high school diploma. Independent *t*-tests (pooled) indicated no significant differences on education level between African Americans and European Americans at the fifth grade wave, but higher baseline number of risks for African Americans $t(220) = -8.00$, $p < .001$ and income-to-needs ratio at the fifth grade timepoint $t(59) = 4.03$, $p < .001$. At the fifth grade wave, 92% of the female respondents were the biological mother of the focus child, 5.1% were grandmothers,

1.4% were adoptive parents, 1.1 % other relatives and the remaining .5% step parents, foster parents, or the parents' girlfriends.

**Plan of Analysis**

Preliminary analyses included descriptive measures for the demographic variables and correlations between major variables. A hierarchical regression model with autonomy support as the dependent variable was conducted to answer study questions 1 and 2. Hierarchical regressions were then conducted with cooperation and self-control as the dependent variables. For step 1 child's gender and age entered. In step 2 early childhood demographic characteristics were entered via the cumulative maternal risk composite. In step 3, early dysregulation and race were entered. In Step 4, fifth grade maternal education and income-to-needs ratio were entered. In step 5, the fifth grade family environment variables were entered: family conflict, warmth, and the child report measure of perception of relationship with mother. In step 6, autonomy support was entered. Lastly, in Steps 7 & 8, the interactions between race and autonomy support and dysregulatory risk and autonomy support were entered.

# CHAPTER FOUR: RESULTS

## Descriptive Analyses

### Mean Scores on Study Variables

The imputed mean score for cooperation was .94 (*SD* = .43), and for self-control 1.51 (*SD* = .47) with each on a zero to two scale. Early dysregulation and autonomy support were normally distributed—see Table 4 for means and correlations for study variables. Examining differences by racial grouping, the mean autonomy score for African Americans was .50 and for European Americans was .57. Dysregulation for the European Americans was slightly below the mean (-.14) and for African Americans was at the mean (.00). European Americans scores for teacher-reported cooperation and self-control were higher than for African Americans.

### Correlations

The social competence measures in this study were correlated with each other ($r = .41$, $p < .05$). Early dysregulation was correlated significantly with child gender, $r = .18$, $p < .01$; with boys exhibiting higher levels of early dysregulation. Early dysregulation was also significantly correlated with measures of risk—positively to the number of early maternal risk factors, income-to-needs ratio, fifth grade family conflict, negatively to maternal expressions of warmth, and the child's perception of relationship to mother and to teacher-reported self-control. (See Table 4). Early dysregulation was also negatively correlated to autonomy support ($r = -.09$, $p <.05$), but this did not reach the level of significance in the regression model predicting autonomy support after other variables were controlled. Being a male child was positive correlated with maternal warmth/positivity toward the child in the parent-child discussion task ($r = .09$, $p < .05$) and negatively with teacher-reported cooperation ($r = -.14$, $p < .05$). The

children's perceptions of the quality of their relationships with their mothers were correlated with family conflict ($r$ = -.16, $p$ < .01) and maternal warmth toward the child ($r$ = .10, $p$ < .05).

**Preliminary Study Questions**

In the preliminary hierarchical regression analysis predicting autonomy support, racial identification ($p$ < .001) was a significant predictor of maternal autonomy support after controlling for child age, child gender, parent education level and needs-to-income ratio, $B$ = .362. (See Table 5. Note, standard errors are not computed for the pooled data and the degrees of freedom for the independent t-tests are greatly reduced). These results support Hypothesis 2 that African American parents would support autonomy less than European American parents. Independent $t$ tests indicated mean level of autonomy support given by African American mothers ($M$ = .59) and European mothers ($M$ = .52) were significantly different from each other, $t(72) = 4.84$, $p$ < .001, with European mothers, on average, providing more support for autonomy. The mean difference, while significant, is small: .07 on a 0 to 1 scale. Early dysregulation was not a significant predictor of maternal autonomy support in fifth grade; thus, Hypothesis 1was not supported. Overall, little of the variance in autonomy support (4.7%) was explained by the model.

Table 4
*Correlations for Study Variables*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Male child | -- | | | | | | | | | | | | |
| 2. Child's age | .04 | -- | | | | | | | | | | | |
| 3. Maternal risk | -.03 | -.03 | -- | | | | | | | | | | |
| 4. Early dysregulation | .18** | -.05 | .15** | -- | | | | | | | | | |
| 5. Race | .02 | .01 | .22** | .06 | -- | | | | | | | | |
| 6. Maternal education | .00 | .01 | -.16* | -.08 | -.04 | -- | | | | | | | |
| 7. Income-to–needs ratio | .01 | .06* | -.23** | -.13** | -.14* | .23** | -- | | | | | | |
| 8. Family Conflict | .02 | .01 | .03 | .18* | -.09** | -.05 | -.13** | -- | | | | | |
| 9. Maternal warmth | .09* | .01 | -.12* | -.12* | -.11* | .03 | .02 | -.06 | -- | | | | |
| 10. Child relationship with mother | -.03 | .02 | .02 | -.07* | -.01 | .01 | .02 | -.16** | .10* | -- | | | |
| 11.Autonomy Support | -.03 | .04 | -.10** | -.09* | -.15** | .09 | .06 | -.02 | -.05 | .07 | -- | | |
| 12. Cooperation | -.14* | -.03 | -.05 | -.06 | -.02 | -.14 | .00 | -.01 | .04 | -.05 | .01 | -- | |
| 13. Self-control | -.07 | -.03 | -.07 | -.10** | -.07 | -.08 | -.01 | -.03 | -08 | -.02 | -.01 | .41* | -- |
| Means for continuous variables | -- | 10.58 | 2.58 | -.048 | -- | 2.9 | 1.58 | | 4.68 | 3.57 | .545 | 1.11 | 1.07 |

Note: * $p < .05$, ** $p < .01$

Table 5
*Regression Model Predicting Autonomy Support*

| Predictor | | Δ $R^2$ | B |
|---|---|---|---|
| Step 1 | | .00 | |
| | Gender (1 = male, 0 = female) | | -.07 |
| | Child's age (reported) | | .09 |
| Step 2 | | .02* | |
| | Education Level | | .09* |
| | Needs-to-income ratio | | .04 |
| Step 3 | | .03* | |
| | Early dysregulation | | -.06 |
| | Race | | .36** |
| Average (Pooled) Adjusted $R^2$ | | .05 | |

Note: *$p < .05$, **$p < .01$

**Primary Study Questions**

The primary study questions concerned the relationships of maternal autonomy support and early dysregulation to social competence in low-income fifth graders. Research Question 3 asked about the direct relationship of autonomy support to social competence. Previous research was insufficient for making a hypothesis regarding main effects of maternal autonomy support in predicting fifth grade social competencies. Research Questions 4 and 5 looked at potential moderating effects. No hypothesis was formed for Question 4 about whether dysregulation would moderate the effect of autonomy support on social competence. However, for Question 5, the extant research pointed to the moderating effect of race on the effects of autonomy support. Therefore, because Hypothesis 5 predicted autonomy support would have a weaker relationship to social competencies for African American families than European American families,

significant interactions of autonomy support and race were expected. None of the hypotheses for the primary study questions were supported. Autonomy support did not predict teacher-reported self-control or cooperation and no moderating effects were found. The details of the regression models are described below.

**Results for Cooperation**

The study variables were entered in seven steps in the regression model. The total variance explained by the pooled model results was 4.6%. Change in $R^2$ for each step was not computed by the statistical software for the pooled data. Child gender was significant ($B$ = -.23, $p < .001$), indicating being male, dummy coded 1, was negatively associated with cooperation in fifth grade. No other variables in the model were significant predictors of cooperation. Maternal risk, was entered in step 2, early dysregulation and race were entered in step 3, maternal education level and income-to-needs ratio at grade five were entered in step 4, family conflict, maternal warmth, and child's perception of relationship to mother were entered in step 5, autonomy support was entered in step 6, and all two-way interactions of autonomy support, dysregulation, and race were entered in step 7.

Table 6
*Results for Hierarchical Regression Models Predicting Self-Control and Cooperation*

| | | *Self-Control* | | Cooperation | |
|---|---|---|---|---|---|
| | Predictor | *B* | SE *B* | *B* | *SE B* |
| Step 1 | Gender (1 = male, 0 = female) | -.15* | .07 | -.23*** | .06 |
| | Child's age (reported) | -.04 | .05 | -.03 | .04 |
| Step 2 | Maternal Risk | -.05† | .03 | -.03 | .03 |
| Step 3 | Early dysregulation | -.06† | .03 | -.01 | .02 |
| | Race | .11* | .06 | .04 | .06 |

Table 6 (con't)

| | | | | | |
|---|---|---|---|---|---|
| Step 4 | Maternal education level (5th grade wave) | .01 | .05 | -.02 | .05 |
| | Income-to-needs ratio (5th grade wave) | -.01 | .03 | .00 | .03 |
| Step 5 | 5th grade family conflict | -.03 | .03 | -.01 | .03 |
| | Maternal warmth toward child | .03 | .03 | .01 | .03 |
| | Relationship with mother | -.03 | .03 | -.03 | .03 |
| Step 6 | Autonomy support | -.01 | .03 | .02 | .03 |
| Step 7 | Race by dysregulation interaction | .01 | .05 | -.01 | .04 |
| | Autonomy by race interaction | -.05 | .06 | -.06 | .04 |
| | Autonomy by dysregulation | -.02 | .03 | -.02 | .02 |
| Average highest total adjusted $R^2$ | | .04 | | .05 | |

Note: $^{\dagger}$ $p < .10$, * $p < .05$, ** $p < .01$, ***$p < .001$

**Results for Self Control**

The steps of the hierarchical regression model for self-control were identical to those for cooperation. The highest $R^2$ value for the pooled models was .04. Child gender, entered in step 1, was a significant predictor of self-control, $B = -.15$, $p = .03$, males associated with less self-control. Emerging trends for maternal risk, entered in step 2 ($B = -.05$, $p = .09$) and dysregulation ($B = -.06$, $p = .06$), entered in step 3, indicated these variables may be associated with very small reductions in self-control. Race, also entered in step 3, was a significant predictor of self-control ($B = .11$, $p = .04$). The controls for factors concurrent with the discussion task (maternal education, income-to-needs ratio, family conflict, maternal warmth, and the child's report of relationship to mother at the fifth grade timepoint) were not significant.

The lack of significant betas for autonomy support and the interaction terms indicates autonomy support is not associated with teacher-reported self-control , either as a main effect or as moderated by race or dysregulation—answering research questions three, four, and five in the negative.

**Post Hoc Examination of Autonomy Support Items**

Autonomy support for this study was conceived as a variable measuring parental support of child initiative in the parent-child discussion task. Therefore, the coding scheme favored child initiative over mutual cooperation. Given that some results that were contrary to expectations, a simple examination of each autonomy support item by racial group was warranted to see if the effects of individual items were all in the expected direction. A cursory post-hoc examination of the boxplots was conducted to see if means on individual items followed the assumed pattern. The levels of the outcome variables were checked at the mean of each autonomy item. Results will be presented separately for each racial group, given the research question anticipating differences according to racial identification. Examining means for cooperation for African Americans, the cooperation score was lowest when the child picked the topic or when the child decided when to move on to the next topic. The parent not interrupting, the child holding the cards and the child proposing a solution were associated with higher cooperation scores. Thus, within the African American subsample, the individual items making up the autonomy variable were not consistent in the direction of their relationship to cooperation. Again, for African Americans, higher self-control was associated with parent picking the topic, the parent or both deciding on the topic, the parent holding the cards. The parent interrupting the last question was not associated with any difference in self-control.

Examining the mean of the individual items for European American families, the parent picking the topic, was associated with the highest cooperation and highest self-control. For cooperation, the child deciding when to move on to the next topic was highest. For cooperation it did not make a difference who held the cards, for self-control the parent holding the cards was associated with higher scores. The parent interrupting the final question did not influence cooperation or self control scores, nor did child proposing a solution for cooperation. For self-control, the child proposing a solution was associated with lower self-control scores.

**Results of Hierarchical Regressions Using Only Cases with Complete Data**

As previously described, the regression analyses for this study were run on multiple imputed data sets to reduced bias and error. Because there was a substantial amount of missing data and the relatively small sample without missingness differed in significant ways from the sample as a whole, analyses run using listwise deletion cannot be assigned any specific meaning and the results do not generalize to a larger sample. However, as a point of information, the results from the listwise regression analyses are summarized below.

**Self-control regression with listwise deletion**. In the regression model predicting autonomy, race—as with the imputed data—and dysregulation were significant predictors of autonomy support. The hierarchical regressions predicting cooperation and self-control were run using only the grade five controls for education level and income (not early maternal risk) in order to increase the *N* to 250. The results, however, differed when using only the completed cases and indicated different relationships between autonomy support, race, dysregulation and the outcome measures of social competence for that subset of the EHSRE study participants. The results cannot be generalized to the population as a whole, but are summarized briefly here for comparison purposes and to potentially inform future analysis of the distinctive features of

this group that may contribute to these results. In the regression predicting self-control, again, child gender was a significant predictor ($\beta$ = -.24, $p$ < .001). Age ($\beta$ = .11, p = .08) approached significance. Race ($\beta$ = *.28, p < .001)* and dysregulation ($\beta$ = -.14, $p$ = .02*)* entered in step 2 were significant and significantly increased the adjusted $R^2$ from .06 to .16. None of the other control variables were significant or increased the variance explained by the model. There was not a significant main effect for autonomy support, however, the three-way interaction term between autonomy, dysregulation and race was significant ($\beta$ = .532, $p$ = .03) and significantly improved the explanatory power of the model, with a resulting $R^2$ of .18.

**Cooperation regression with listwise deletion.** In step 1 child gender ($\beta$ = -.34, $p$ < .001 and age ($\beta$ = .10, $p$ = .10) contributed significantly to the prediction of cooperation. Adding dysregulation and race in step 2 caused a significant increase in $R^2$, now accounting for 14% of the variance in cooperation. Dysregulation was not a significant predictor, however there were significant main effects of race ($\beta$ = .14, $p$ = .02). Subsequent steps had lower adjusted $R^2$ values, and the change in $R^2$ was not significant beyond step 2. There were no main effects of autonomy support when it was entered into the model in step 5. However, in step 6 when the autonomy by race interaction term was entered, the strength of the autonomy support variable increased to marginal significance ($\beta$ = .17, $p$ = .06). The interaction term itself ($\beta$ = -.27*, p* = .19*)* was not significant, however. None of the three interaction terms, when entered individually or together, were significant.

## Summary of Results

The mean amounts of autonomy support provided by mothers (or mother substitutes) differed in this low-income sample according to racial identification. As expected, African

American mothers were more directive, and less supportive of their fifth graders' autonomy than were European American mothers. However, contrary to expectations, these differences did not predict differences in teacher-reported cooperation or self-control. Consequently, race and dysregulation could not and did not moderate the effects of autonomy support. Early dysregulation was a marginally significant predictor of later self-control, but had no effect on fifth grade cooperation. An analysis of missing data revealed missingness was associated with significant measured differences between groups with and without missing data. For that reason, autonomy support may be uniquely related to social competence for some low-income subgroups, since the hierarchical regression model run only with cases with complete data ($N$ = 250) found a significant 3-way interaction in predicting self-control. This suggests in subgroups with characteristics not controlled for in this study, more complex relationships may exist between autonomy support, race, and dysregulation that do not apply more generally in a low-income population.

# CHAPTER FIVE: DISCUSSION

## Overview

The key finding in this study is that African American and European American mothers (and mother figures), on average, differ in the autonomy support they provide to their fifth grade children when discussing areas of disagreement. However, these differences do not appear to have any direct relationship with their children's levels of cooperation and self-control at school as reported by their teachers. Autonomy support is frequently included in scholarly literature as an important aspect of parenting, especially during adolescence. Given the lack of consistent findings in the research literature and the cultural and contextual variations in autonomy support, the results of this study suggest that—in order to advance a nuanced understanding of how autonomy support does or does not enhance positive development in children—it is necessary to define the essential features of autonomy support and to examine the accompanying features of personal, familial, and ethno-cultural context that affect the selected outcomes. This study contributes to that discussion in several ways. In this chapter, these contributions will be discussed in relation to previous research. Limitations to the study, implications for practice, and implications for future research will also be presented.

## Summary of Findings Related to Research Questions

The first question addressed in this study was whether maternal autonomy support differed according to race or early dysregulation. In line with expectations, racial self-identification did predict differences in mean levels of autonomy support, with beta coefficients indicating being European American was related to a meaningful .36 standard deviation increase in autonomy support. However, child dysregulation in early childhood did not predict levels of parental autonomy support when children were in fifth grade. The primary study questions

concerned the effects of autonomy support on two social competencies in fifth grade, namely children's cooperation and self-control, and whether these effects were moderated by early dysregulation or race. Race was a significant predictor of self-control ($p$ = .042) and trend-level effects were found for early dysregulation ($p$ = .063). However, contrary to expectations of moderating effects, race and early dysregulation did not interact with autonomy support in predicting child outcomes. Nor did autonomy support itself have a significant main effect on either self-control or cooperation. For cooperation, gender was the only significant study-related variable. Boys had lower teacher-reported cooperation and self-control. For both cooperation and self-control, the effects of child gender accounted for most of the variance explained by the models. (Pooled $R^2$ for the models were .038 for self-control and.046 for cooperation). In addition, for self-control, maternal risk was a marginally significant control variable ($p$ = .088).

**Variations in Autonomy Support by Race**

The results of this study are consistent with previous research that has found ethnic/racial differences in parenting styles. In keeping with previous studies (Brody & Flor, 1998; Jackson-Newsom, et al., 2008; Mandara, 2006), this study found, on the whole, that African American mothers were somewhat more directive and controlling and provided less autonomy support. This is also consistent with Ispa et al.'s (2004) finding of significant differences in intrusiveness (which impinges on autonomy) and warmth between African American and European American mothers in the same EHSRE sample when the children were 15 and 25 months old. The current study found, on average, both African American and European American mothers provided a mid-range level of autonomy support ($M$ = .52 for African American mothers, and .59 for European American mothers). Individual scores in the mid-range for the composite autonomy support variable would indicate initiative and participation on the part of both mother and child,

although African American mothers provided less maternal autonomy support and warmth than did European American mothers. This is consistent with findings that African American youth view parents having more legitimate decision-making authority (Smetana, 2000).

Although some previous research indicated variations in parenting practices according to socio-economic status (Clark & Ladd, 2000, McLoyd, 1990, Pinderhughes, et al., 2000), this study found mean differences according to racial self-identification, even within a low-income sample. Even within the general income eligibility requirement for Early Head Start, wide variation occurs in community context (Bender, Fedor, & Carlson, 2011). Study participants resided in rural, urban, small town, and suburb communities. Some research has found that restrictiveness (limiting autonomy) is associated with better academic outcomes in African American youth residing in dangerous or poorer quality neighborhoods, but not in high quality neighborhoods (Dearing, 2004; Gonzales, Cauce, Friedman, & Mason, 1996). One study found that rural African American parents portrayed responsible parenting as "involved, supportive, and highly vigilant…with frequent bi-directional mother-child discussions" (Brody, Murry, Kim, & Brown, 2002, p.1507). This vigilance can be manifested as mothers restricting autonomy and choice in order to protect their children. Post hoc analyses examined this possibility. A summed composite of indicators of run-down and less safe neighborhoods (garbage in the streets, evidence of drug and alcohol use, data collectors' perception of hostility and lack of safety) were negatively correlated with autonomy support ( $r = -.094$, $p < .01$). Independent sample *t*-tests indicate the neighborhoods of African American participants had slightly more indications of lack of safety than the neighborhoods of European American participants ($M = 9.6$ for European Americans and 10.6 for African Americans $t(1061) = -6.123$, $p < .001$). However, race ($\beta = .159$, $p < .001$) was still a significant predictor of autonomy support after the composite indicator

of neighborhood safety (β = -.065, $p$ = .032) was entered into the regression model. (This regression model used a simple mean substitution for missing data.)

**Interpreting Lack of Effects of Autonomy Support**

**No moderation by race**. Concerning the primary study questions, the study hypothesis was that autonomy support would have a weaker relationship to social competence with African American families than for European American families. However, results indicated no significant relationship between autonomy support and children's cooperation or self-control for either African American or European American fifth graders. The lack of moderating effects of race was especially surprising given that in toddlerhood with the same EHSRE sample, there were both the aforementioned differences in parenting practices, but also longitudinal racial differences in effects of those practices on child interaction with parents (Ispa, et al., 2004). For example, Ispa and colleagues report that while maternal intrusiveness predicted toddler negativity for African Americans, more and less acculturated Mexican Americans and European Americans, this relationship was moderated by warmth only for African Americans. For European Americans only intrusiveness predicted other decreases in the quality of the dyadic relationship. The fact that these differences were apparent when the children were toddlers suggests differences associated with ethnic-racial cultural groups are more likely due to intrusiveness representing a constellation of culturally influenced parenting attitudes and behaviors rather than toddler's culturally-influenced perceptions. However, similar racial differences have been found in adolescence as well. One study found a lack of autonomy support was connected to detriments in parent-adolescent relationship quality and adolescent social functioning in low-risk neighborhoods, but not in high-risk neighborhoods (McElhaney & Allen, 2001). Unilateral parental decision-making had positive associations with academic

competence and less deviancy only for African American adolescents, whereas joint decision-making was associated with work orientation, self-reliance, and self-esteem for African Americans, Hispanic Americans, and European Americans, but higher academic competence only for European Americans (Lamborn et al., 1996).

While the studies just mentioned found racial differences in the effects of autonomy support, it must be noted that studies that look at outcomes of an authoritative parenting style which includes acceptance-involvement, strictness-supervision, and psychological autonomy granting (Gray & Steinberg, 1999), generally find it associated with positive child adjustment across ethnicities and social class (Kaufmann, et al., 2000; Steinberg, 1990). The lack of significant interactions or moderation by race in this dissertation study are difficult to interpret because a) main effects of autonomy support were also not found and b) the subsample of complete cases did find a significant three-way interaction between race, autonomy support, and dysregulation in predicting self-control. In light of findings in other studies, this suggests that complicated contextual factors and influences of variables not included in the study may be part of a picture—not yet understood—which includes racial variation in effects of autonomy support.

**No main effects of autonomy support**. The other primary result of the study to be discussed here is the lack of main effects of autonomy support. (This was true in the sub-sample of complete cases as well.) There are several potential explanations or interpretations of these results. The merits of each will be discussed. First, the results will be discussed in relation to the outcome variables: the measurement of social competence and previous evidence for effects of autonomy support on various measures of social competence. Secondly, the results will be discussed in the context of ongoing debate regarding the nature and definitions of autonomy

support, its importance, and explanations regarding the conditions under which it may have effects on child outcomes.

**In the literature, mixed results predicting social competence**. Research to date has found mixed evidence for the effects of autonomy support on social competence. Fathers' positive interactions in a discussion task (a composite including warmth, encouraging independence and problem solving) predicted teacher-reported social competence in fourth grade boys and mothers' controlling behaviors in the discussion predicted boys aggression and were marginally related to fourth grade girls avoidant behaviors (McDowell, Kim, Robin, & Parke, 2002). One study that found maternal autonomy support at age five predicted social competence at age eight included only European American (white) children from upper-class and working-class Canadian families (Joussemet, Koestner, Lekes, & Landry, 2005). Clark and Ladd (2000) found autonomy support did not predict social competence in five-year-olds, once connectedness (mutual warmth, positive engagement, intimacy and positive tone) were controlled. In this study, neither warmth (entered first) nor autonomy support was significant in the pooled regression output. The Clark and Ladd (2000) study is one example of a potential confounding of autonomy support with warmth and responsiveness—a point which will be discussed at greater length in regard to definitional issues with autonomy support.

**Measuring social competence**. It may be that the measures of cooperation and self-control utilized in the current study leave out essential social skills predicted by autonomy support or the context in which they may be exhibited. SSRS subscales for assertion, responsibility, and empathy were not used in the EHSRE study. The social skills selected as measures in this study are a small subset of the range of social skills and competencies required to engage constructively with people in the various settings in which youth engage. The teacher

survey included items such as *Compromises in conflict situations by changing own ideas…,Cooperates with peers without prompting, Follows classroom rules, Persists in completing tasks, Gets along with people who are different."* Results varied by parent and child gender. Type of decision making (joint, unilateral parent or unilateral adolescent) predicted adolescent work-orientation, self-esteem, and self-reliance (Lamborn, Dornbusch, & Steinberg, 1996). In the McDowell, Kim, Robin, & Parke (2002) study, teacher-reported positive social competencies were less likely to have significant associations with parent behaviors in the discussion task than clear impairments in social competence (aggression and avoidant behaviors). It either may be that autonomy support is not related to these particular measures of social competence or that measures of antisocial tendencies are more sensitive than measures of prosocial competencies.

Mothers taking over of a discussion task that was intended to be a mutual discussion may also impact children's internalizing problems more than social skills (Barber, 2005; Herman, Dornbush, Herron, & Herting, 1997; Mattanah, 2001). Especially if dominating or taking control of the discussion task is accompanied by negative affect, criticisms, shame, or manipulation (Barber, 1997, Barber & Buehler, 1996, Herman, et al., 1997), this maternal behavior would constitute psychological control. Parental psychological control, often interacting with other parenting characteristics, is related both to internalizing and externalizing problems in children (Aunola & Nurmi, 2005; Caron, et al., 2006; Conger, Conger, & Scaramella, 1997; Galambos, Barker, & Almeida, 2003).

The lack of results is less likely due to lack of relationship between characteristics of discussion-task interactions and teacher-reported social competencies as one study found some parent behaviors in a parent-child discussion task with fourth graders to predict some teacher-

reported social competencies, namely aggression and avoidant behavior (McDowell, Kim, Robin, & Parke, 2002). As mentioned, another study found parental psychological control in a parent-child discussion task with fourth graders related to internalizing and externalizing (Caron, et al., 2006).

**Defining and measuring autonomy support**. The measurement of autonomy support in this study prioritized (support of) child initiative in the autonomy support construct. This is in keeping with the idea (Ryan & Deci, 2000) that an essential role of autonomy support is the child's perception that solutions and actions are self-generated or initiated. Self-Determination Theory (Ryan & Deci, 2000) posits autonomy, relatedness, and competence are core universal human needs. Ryan and Deci view autonomy and relatedness as distinct, but not antithetical concepts. Other researchers such as Lamborn et al.(1996) may capture aspects of relatedness in their examination of autonomy support when looking at mutuality in decision making. In this study mutual decision making—both parent and child choosing topics or deciding when to move on to the next topic—was scored lower than the child alone making those decisions. Because one explanation for the lack of significance of autonomy support as a predictor of social competence might have been that mutual decision making was is a stronger contributor to cooperation than individual initiative, two of the individual items in the autonomy support composite were examined as individual predictors. Post hoc analyses revealed that *who chooses the topic* not related to social competence outcomes, whether it was coded with *child* indicating the most autonomy support or *both* indicating the most autonomy support. Neither was *parent interrupts the last question* [of the examiner to the child]—an item arguably more clearly controlling and interfering with the child's individual expression—related to teacher-reported social competence. These post-hoc analyses address the potential explanations that mid-range

autonomy support scores capturing elements of mutuality might have been more predictive of cooperation because cooperativeness entails mutuality and back-and-forth participation. The alternative view that cooperation may entail stifling one's self-expression at times is somewhat addressed in by the examination of the interrupting child item. Thus the lack of significant effects is not likely due to a teachers' view of cooperation that prioritizes or reflects easy acquiescence rather than child initiative or genuine mutual cooperation.

Another explanation for the lack of relationship between autonomy support and social competence may be the age of the participating children. Although it is necessary to study children before a development occurs and follow them longitudinally in order to assess age-related changes, it may that the effects of autonomy support on social competencies develops over time and may express itself later in adolescence. Dearing (2004) found restricting autonomy was associated with academic competence for young African Americans residing in poor quality neighborhoods, but these benefits decreased with age. In a small longitudinal study, Vuchinich, Angelelli, and Gatherum (1996) found parent-child discussions of disagreements at age 9 were more harmonious and productive overall than at age 11. However, whether youth at age 11 picked the topic of discussion had a major bearing on the discussion quality, whereas two years earlier it had little effect. Since the mean age in this study was 10.58 years, one would expect that this autonomy-dependent shift in discussion quality would be emerging. If the pattern from one study of upper and middle class African American families holds for lower SES families, lower SES youth may expect increases in autonomy over personal issues at later ages than higher SES families (Smetana, 2000). Nonetheless, if children are given more opportunities at home in parent-child discussions to propose ideas or solutions to problems, engage in small scale

decision-making and take initiative, these skills may, over time, translate to the ability to cooperate with others in tasks involving similar skills.

It also may be that findings of benefits of autonomy support in many previous studies are confounded by overlap with other aspects of parenting that have more powerful effects. Although some studies have found independent effects of the dimensions of parenting styles (Gray & Steinberg, 1999; Herman, Dornbusch, Herron, & Herting, 1997), most of the parenting style research has found positive effects of styles of parenting that include respect for children's autonomy along with responsiveness, warmth and behavior limits (Amato & Fowler, 2002; Baumrind & Black, 1967; Bronstein, et al., 1996; Darling, 1999; Maccoby & Martin, 1983; Mandara, 2006; Steinberg, 2001). Indeed, much of the research has found contingent or moderated effects of autonomy related variables (Barber, 1997; Baumrind, 1991; Fletcher & Jefferies, 1999; Steinberg, 2001). Parenting style—typically defined by combinations of high or low responsiveness/connection, demandingness/behavioral control, and autonomy support/psychological control—are intended to capture the emotional climate of a home (Morris, Silk, Steinberg, Myers, & Robinson, 2007; Steinberg, 2001). It may be then that it is this overall emotional tone and a balance of structure or standards and evidence of caring that impacts a broad spectrum of child outcomes. Variations in specific practices of supporting autonomy may not be as important as the overall climate of the home. Both the home context and the cultural or community context may influence the way youth perceive parental autonomy support. The way this study has attempted to limit effects of potential confounding will be discussed at greater length in the following section of this chapter.

**Conclusions.** Although some studies have identified autonomy support as a key element of parenting across ethnicities (Steinberg, 1990), this study presents a different picture.

Autonomy support, as narrowly defined and operationalized in this study, was not predictive of teacher-reported cooperation or self-control in this large sample of low-income African American and European American preadolescents. However, several factors suggest that this conclusion may be over-simplified. First, although this study looked at potential moderating effects of early dysregulation and race, it did not look at potential moderating effects of other parenting forms of parental control. Previous research has found such interactions (Caron, et al., 2006; Galambos, Barker, & Almeida, 2003). Secondly, variables not included in the study account for the vast majority of the variance in social competence. Overall, little variance was explained by the model, implying other factors not included in the study have large effects on social competencies. Also, finding differences in correlations and results with the sub-sample for which there was no missingness indicates other factors not accounted for in the model likely were in play. It may be that with less stressed, more conscientious mothers, autonomy support may have moderated effects on social competence. However, this cannot be concluded from this study and future research would have to include the relevant variables. Lastly, while autonomy support in a problem-solving discussion can model and practice positive social competencies, youth may be learning these skills and competencies through other parent-child interactions. The video-recorded discussion task may not be representative of the overall level of autonomy support given by the mothers in the study.

## Contributions to the Literature

### Minimizing Confounding

This study contributes to the literature on parental autonomy support in several ways. First, in this study care was taken to operationalize autonomy support such that overlap or confounding with other key dimensions of parenting such as emotional support/warmth/

responsiveness and maintaining behavior standards by outlining clear behavioral expectations and enforcing consequences. By not including emotion validation or validation of the child's ideas in the construct of autonomy support, potential confounding with warmth/support, as conjectured by Clark and Ladd (2000), is reduced or eliminated. Indeed, with this discussion task, parental warmth and positivity toward the child had no correlation with autonomy support or with the child's perception of the quality of the mother-child relationship.

This study also minimizes potential confounding with other positive or negative forms of parental control and setting standards, although parental behavioral control or disciplinary strategies were not measured in this study. Conceptually, however, in the context of a task where the mother-child dyad is instructed to discuss areas of disagreement and work toward a resolution, autonomy support, as operationalized for this study, would seem distinct from whether the parent was strict or lax in creating and enforcing standards or household rules. Rather, autonomy support simply relates to whether the parent allows or supports initiative and respects individual expression on the part of the child. This autonomy support involves letting the child control the issues to discuss and the pace at which to discuss them, propose a solution or compromise, not interrupting when the researcher asks the child a question and not taking the "family issues" cards out of the child's hands. This study also clearly distinguishes between strictness/punitiveness and adult oriented goals and constantly guiding the child—both of which are included in *maternal control* as conceptualized by Blandon, Calkins and Keane (2010). Preserving this distinction helps tease out the experiential quality of the relationship from autonomy support *per se.* Very low autonomy support in this study would indicate a maternal propensity to control over and above directiveness related to respect for parental authority, strictness, or maintaining high standards. Autonomy support, as operationalized in this study,

scores child sole initiative as high autonomy support---something that, according to Self-Determination Theory, should support the child's perception of self-generated ideas, which should aid in internal motivation to follow through on proposed solutions outside of the context of parental pressure (Deci & Ryan, 2000; Grolnick, et al.,1997). Additionally, as already mentioned, the effects of autonomy support may depend on the context of other aspects of parenting. This study does not test for moderating effects of maternal warmth on autonomy support, but examines the effects of autonomy support over and above the effects of maternal warmth—which were not correlated to each other.

**Controlling for Children's Perception of Relationship Quality**

Another contribution of this study is the inclusion of children's perceptions of their relationships with their mothers as a control. This study found that maternal autonomy support did not relate to fifth grade children's perception of their relationship with their mothers, suggesting other aspects of parenting or the mother-child relationship have more salience at this age in a low-income population and perhaps have less effect on the child's perception of the quality of the discussion task. This differs from other studies which found African American youth perceived parental restrictiveness as associated with warmth and caring (McElhaney & Allen, 2001; Jackson-Newsom, et al., 2008) . If, based on cultural norms and expectations, autonomy support is not perceived by parents and children to be an essential element of a quality or enjoyable relationship, lack of autonomy support may indeed be less confounded with either harshness or lack of warmth.

**Autonomy Expectations in Preadolescence**

Expectations of maternal autonomy support and potential effects on children's perceptions of the quality of their relationship with their mothers are intertwined with age as well

context (Fuligni, 1998; Smetana, 2002a). Another key contribution of this study is the age group studied. In order to understand when and how age-related changes in the effects of autonomy support begin, and if the ages at which these changes begin differ by race, it is necessary to study time periods before the potential changes emerge. While other studies have examined autonomy support and youth in early and mid-adolescence, it has not been clear if trends found with older youth can be detected as early as fifth grade. Children in fifth grade typically are at an age beginning or approaching multiple developmental transitions created, in part, by the onset of puberty and entry into middle school. As Smetana's research and Social Domain Theory (Smetana, 1991, 2002b) points to youth having greater expectations of autonomy in adolescence, understanding at what age and to what degree expectations for autonomy increase is essential to understanding how autonomy support relates to social competence. We must ask how these expectations vary across racial-cultural groups and if pathways for developing social competencies depend in part on children's expectations of autonomy. While this study did not address expectations of autonomy support by the youth, relevant clues are provided. Differences in autonomy support by racial grouping likely reflect cultural norms, but children's expectations of autonomy support likely include age-based normativeness as well. It may be that for low-income fifth graders from either racial grouping, perceptions of relationship quality do not reflect expectations of autonomy support at this age. However, further research is also called for as different results were found for the unique sub-sample with compete data. For that sub-sample, autonomy support is related positively to relationship with mom, $r = .125$, $p < .05$, for African Americans and no relationship for European Americans. For maternal warmth in the discussion task, the reverse was true. Warmth was associated with positive relationships with mothers for

European  Americans , but not African Americans and warm parents were more likely to provide autonomy support in European American families.

**Effects of Children on Parenting**

This study begins to take into account the interconnections and development of parent-child relationships over time and their effect on social competencies in preadolescents. Empirical evidence for the effects of children's earlier behaviors on later parenting is mixed—with some studies finding evidence of bidirectional influence (Dumas, LaFreniere, & Serketich, 1995; Lansford, et al., 2011; Stoolmiller, 2001).  However, given that ecological and developmental systems theories posit that patterns of children's behaviors affect parenting behaviors, as well as the converse, that possibility warrants inclusion in research where longitudinal data are available. This study does not find evidence for children's dysregulation affecting maternal autonomy support among low- income African American and European American families generally. However, for the sub-sample with complete data, mothers whose children were highly dysregulated at age two and three, were more likely to be directive, offering less autonomy support in a discussion task, many years later.  This study also does not capture whether those highly dysregulated toddler's remained dysregulated over the intervening years, or whether parents, effectively or not, adapted their parenting practices in response to child dysregulation. However, evidence provided by this study shows that by fifth grade, overall early dysregulation did not account for any of the differences in autonomy support.

**Dysregulatory Risk and Social Competence Research**

Some research suggests problematic trajectories are apparent early in life for those children who exhibit high levels of aggression past early toddlerhood when self-regulation skills are less developed and aggressiveness is fairly common (Campbell, et al., 2000). Research has

more frequently looked for indicators of ongoing or increasing developmental risk, finding multiple risks combine to predict problematic trajectories (Campbell, et al., 2000). This study provides some partial support for the idea of dysregulatory risk—early dysregulation was a marginally significant predictor of self-control, but not of cooperation. To date, little research has examined the development of social competence in light of earlier dysregulatory risk. One exception, Blandon, Calkins, and Keane (2010), found dysregulatory risk (a composite of poorer emotion regulation strategies and aggression at ages two and three) to be predictive of poorer ratings on some social skills in kindergarten, including negativity, problem behaviors, but more positive scores for perceived peer acceptance. Including dysregulation at ages two and three as a independent variable in this study allowed ascertaining whether or how early dysregulation might affect the development of social skills years past the time frame of the Blandon, Calkins and Keane (2010) study. The study results point to quite limited effects—a trend emerging for self-control and no effect on cooperation. Additionally, as self-control implies the opposite of or lack of dysregulation, this may suggest small auto-regressive effects for self-control that do not generalize to effects on other social skills.

**Suggestions for Future Research**

This study adds to a body of research on parental autonomy support that has not produced consistent and clear conclusions. Research on psychological control—which is damaging to children's autonomy—has shown the effects of psychological control vary depending on the context of other aspects of parenting. It may be that autonomy supportive parenting practices are moderated in similar ways—a possibility which suggests future research on autonomy support test for moderating effects of other parenting practices, especially behavioral control, harshness or punitiveness, and psychological control. Additionally, as some of the

inconsistency in study results regarding autonomy support is due to variations in definitions of autonomy support, future research that specifically compared the impact of various constructs sometimes included under the label of autonomy support would help clarify the particular effects of each. Is negotiation or listening to and validating the child's opinions (which were not included in the measure used in this study) related to social competence? Or is allowing or encouraging independent action and decision-making important?

**Assessment of dysregulation**. The full sample analysis did not find early dysregulation predicted maternal autonomy support in fifth grade. However, it may be that autonomy support differs according to current levels of dysregulation. To fine-tune understanding of the affects of dysregulation, future research could a) use a dichotomous variable indicating high early dysregulation or not, and b) assess dysregulation in mid-childhood as well as at ages two and three.

A**dditiona**l **measures of social competence**. As early dysregulation was a marginally significant predictor of teacher-reported self-control, but not cooperation, including other measures of social competence in future studies is also warranted. Other aspects of social competence may also be more related to autonomy support. In particular, measures of children's decision-making or problem solving abilities may be more affected by parental autonomy support. It also may be that social skills displayed in a peer context are more affected by parental autonomy support. Comparing the relationship of autonomy support to academic or other child outcomes with the same sample is also recommended.

**Other study designs**. This study looked cross-sectionally at the relationship of autonomy support to teacher-reported social competencies. As parents typically grant increasing autonomy with age, research that examined the relationship of autonomy support to social competence

longitudinally might capture later emerging effects on social competence and examine whether the effects of autonomy support are enhanced by developmental readiness. A cross-lagged design may be one way of examining these relationships. Testing for curvilinear relationships also addresses the question of whether moderate autonomy support is superior to either extremely low or high autonomy support. Future research could also compare autonomy support provided by fathers as well as mothers and include other racial-ethnic groups.

**Learning from patterns of missingness**. Future research should also include the variables upon which cases with complete data differed, including maternal depression and parenting stress. These variables, in addition to affecting the likelihood of missing data, may also affect the home environment or parent-child relationship in ways that affect the relationship of autonomy support to children's social competence. Thus, finding that results for complete-data participants that do not hold up for the full sample analysis can provide clues for future research that help discover conditions under which autonomy support might have impact on social competence in preadolescence and beyond.

**Limitations**

While this study addressed some of the limitations and potentially confounding effects of previous studies, this study also has its design constraints and limitations and the results must be interpreted with those in mind. First, although missing data was imputed using a method which is far superior in eliminating bias than simple listwise deletion, no imputation method surpasses avoiding attrition and missing data altogether (Enders, 2010). Therefore, the reader is again reminded that the findings are based on pooled estimates rather than complete data. The analysis of missingness, the noted differences in results when cases were deleted listwise, and the small total amount of the variance accounted for, all call for emphasizing that the results of this study

leave out much of the story. Missing data in this study were handled by multiple imputation, a method assured of reducing bias and estimation errors. This method utilizes and benefits from information gained from the large number of variables and the large number of cases in the EHSRE study. However, complete data for all participants is superior to the best available imputation methods. Another limitation is that although this study utilizes longitudinal data, autonomy support and the social competence were measured cross-sectionally. Therefore, any relationship between autonomy support and the social competencies, if one had been found, could not have been identified as causal.

## Implications for Practice

The broad consistency of research finding positive outcomes associated with the authoritative parenting, for which autonomy support is a component, has led to its recommendation across cultures (Mandara, 2006; Steinberg, 2001). However, increasingly research has attempted more nuanced looks at parenting which take cultural meanings and context into account. The results of this study corroborate previous research findings that autonomy support is more normative for European American families than for many other ethnic or racial minorities. Globally, many cultures expect children to have less autonomy in relationships with their parents. In fact, Carver & Scheier (1999) ask whether autonomy is really a universal desire. Examining within group variations and looking for moderating effects of ethnic-racial grouping is essential for culturally sensitive interventions. Additionally, if, within a particular cultural context, autonomy support is not specifically linked to gains in social, emotional, or academic competencies, reductions in risk, or positive developmental outcomes as self-defined, then identifying autonomy support as an essential part of optimal parenting practices may be misleading and culturally insensitive. Again, if greater autonomy support is

beneficial only in certain communities, under certain conditions, or only for children with certain characteristics but not for others, those nuances have important implications for practice as well.

To date, there is insufficient evidence to draw firm conclusions, but enough evidence to advocate caution in assuming autonomy support is universally beneficial. While in broad strokes this study found no relationship of autonomy support to the measured social competencies, the significant interactions found in the subset of cases with complete data suggests autonomy support may be related to self-control and cooperation in some cases. Additionally, future research could find the relationship of autonomy support to social competencies to be curvilinear, such that both very high and very low levels have similar effects and these potentialities would also have implications for parents and practitioners.

Evidence based parent education programs, while sometimes evaluated with diverse groups and adapted for cultural relevance or sensitivity, generally provide the same basic recommendations across ethnic/cultural groups. Culturally appropriate programming would recognize that African American parents, on average, tend to talk and relate to their children in a less autonomy supportive manner. However, the results of this study imply culturally sensitive interventions recognize not only that families do vary in their communication patterns and support for child autonomy, but that these preferences and patterns—understood outside the totality of family, culture, and community contexts—may have little direct effects on children's social competence. Therefore, as this study did not find autonomy support directly affecting youth's social competence in school for either European Americans or African Americans recommendations regarding parental autonomy support warrant a cautious and sensitive approach that emphasizes overall family climate and recognizes that families may constructively adapt to both their racial and cultural communities and their children's regulatory abilities.

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