Social Contextual Factors of the African American Family Environment as Predictors of Children’s Early Language Outcomes

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ABSTRACT

Erica Camille Odom: Social Contextual Factors of the African American Family Environment as Predictors of Children’s Early Language Outcomes
(Under the direction of Lynne Vernon-Feagans, Ph.D.)

The purpose of this research was to examine contextual factors related to African American children’s early language environment. More specifically, this study explored the contribution of family poverty, mother’s nonstandard work schedules, and mother’s perception of racial discrimination to children’s early language environment and expressive language outcomes. Data for this study was drawn from the Family Life Project. Participants included 255 African American mothers who were employed when their children were 15 months of age. An additive model, which included maternal shift schedule and proximal parenting factors was determined. Working a nonstandard shift at 15 months was negatively associated mother’s language input at 15 months and children’s expressive language scores assessed during a picturebook activity at 24 months. Positive, engaged parenting at 15 months was positively associated with children’s expressive language abilities at 24 months. Although perceived racial discrimination negatively predicted maternal psychological distress, these findings were not extended to children’s language outcomes. Moreover, moderation of shift schedule by perceived racial discrimination was not found.
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“Good, better, best. Never let it rest, until your good is your better and your better is your best.”

This dissertation is dedicated to my family. To my mom and dad, your prayers and support have been immeasurable. You are the epitome of love and sacrifice. I can only hope that I make a mark in this world as indelible as the one you have made in my heart. To my sisters, our Saturday morning “giggle-fests” always brought a bright spot to my week. I thank you for your comedic relief that carried me through the long weekends that were filled with dissertation work. To Nadya, Randy, and Leo -- “my little family”. It has been amazing to see you grow from individuals, to a couple, and now as baby makes three. You’ve given me a place of refuge on my darkest of days. Nadya, you always believed I could, even when I didn’t. I thank you for your advice, your encouragement, and most of all, your friendship. To Jesse, thank you for your love and support. I appreciate the dinners, the late nights of study at the dinner table, and eventhough I hated it, your energy at 2 a.m. always kept me motivated.

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CHAPTER ONE

Statement of the Problem

Children’s early language development has been identified by research scholars as an integral component of the progression toward reading proficiency (Snow Burns, & Griffin, 1998). However, many children enter kindergarten with language skills that differ from those that the emergent literacy research suggests are needed to support their literacy achievement. African American children have been consistently identified as being at increased risk for reading failure due to differences or deficits in early language exposure and use, especially when they are from low-income households (Craig, Conner, & Washington, 2003; Snow, Burns, & Griffin, 1998; Vernon-Feagans, Head-Reeves, & Kainz, 2004; Washington, 2001). The extant literature on poverty and economic disadvantage clearly shows that children reared in families with low socioeconomic circumstances (SES – income, educational attainment, and social class) have poorer cognitive and language outcomes than children from high SES families. Also, children from impoverished households have on average, lower scores on measures of receptive vocabulary, reading ability, and other measures of academic performance (Bradley & Corwyn, 2002; Hoff, Laursen, & Tardiff, 2002) than children from upper socioeconomic households. Furthermore, studies indicate that parents in low-income households tend to
provide a less rich language environment than parents from higher socioeconomic households (Hart & Risley, 1995; Hoff, 2003). As a result, many early intervention programs have begun to emphasize language in the curriculum to aid in closing the gap in achievement for low-income African American children (Craig et al., 2003; Vernon-Feagans, 1996).

Although African American children from low-income households are overrepresented among those with early language difficulties, contextual factors beyond poverty and its associated structural correlates (i.e., education and single parenthood) may be implicated in language development. In the past, studies of language development have mostly compared the language environments of middle to upper-income White children to low-income African American children. Expectedly, these comparative analyses have evidenced “poorer language environments” (i.e., less child directed speech, fewer wh- questions, etc.) for African American children from impoverished, less educated households (Hart & Risley, 1995; Hoff-Ginsberg, 1991). Although the home environment is a major predictor of children’s cognitive and language development (NICHD, 2000), the interactions that occur between children and adults warrant a contextualized analysis. More recently studies have become available that have systematically tried to differentiate issues of poverty from factors related to race or ethnicity by exploring language development within African American only samples (Craig, Conner, & Washington, 2003; Hammer & Weiss, 1999; Washington, 2001).

Although the effects of poverty during the early phases of language development have been proven to be quite salient in terms of later school readiness and literacy achievement, part of the variability in outcomes for African American children remains
unexplained. As such, authors have begun to explore how African American families are situated within multiple levels of influence and how these contexts impact parenting and child outcomes. Thus, a conceptual model that explores indicators of income, along with predictors, mediators, and moderators that are highly relevant within an African American sample may illuminate developmental processes in children’s language acquisition that have not been accounted for in previous examinations (Steinberg & Fletcher, 1998).

Ecological Systems theory suggests that economic constraints associated with low-wage jobs along with work conditions may contribute to the creation of stressful family contexts and have implications for early childhood outcomes (Bronfenbrenner, 1998). Prior research indicates that the concomitant psychological distress produced as a result of the pressures of economic insufficiency is a key feature of stressful family environments (McLoyd, 1990, 1998). Parents who experience distress as a result of economic disadvantage are more depressed, experience greater relationship conflict and are less supportive and skilled in their interactions with their children (Conger, Wallace, Sun, Simons, McLoyd, & Brody, 2002). Thus, parental psychological well-being and parent interaction style may be primary mediators of the impact of poverty on child outcomes.

Although, developmental researchers have closely examined family interactions among economically disadvantaged families, it is insufficient to consider income alone as stressor for parents. Recent policy and labor market changes have caused researchers to examine variation in employment conditions of low-income families and whether these differences matter for children. Parents who are employed in jobs with poor work
conditions, like nonstandard hours, may suffer from greater psychological distress. Few studies have explored how the socially structured experiences of occupation may impact parental mental well-being and family interactions. Thus, contexts that are predictive of parental psychological functioning and their effect on family processes may need to be more clearly articulated. When one considers, in combination, parental working conditions, social and economic conditions, a better model of developmental outcomes for children may be elucidated.

Particularly in the African American community, it may be important to account for larger social forces to gain a more comprehensive picture of the life experiences of families with young children. As Garcia-Coll and colleagues (1996) have emphasized, the ecologies in which children of color interact may influence developmental differentiation in ways that cannot be explained by traditional paradigms. Institutional and individual practices of racial discrimination create a negative psychosocial context within which African American parents may raise children. Perceived racial discrimination is thought to amplify the impact of contextual stressors on outcomes (Peters & Massey, 1983). However, very few studies have explored the impact of employment conditions and perceived discrimination in concert, as extrafamilial contextual conditions that pose challenges for parents and their children. In combination, the impact of high levels of perceived discrimination, poverty, and nonstandard employment, may exact a negative psychological toll on parents and leave them ineffective in caregiving situations. Given the prominence of psychologically draining conditions among low-income parents, it is important to gain a better
understanding about the environmental factors that may alter competence for their children especially in African American families.

I propose to utilize an ecological approach to develop a model that highlights the importance of work during nonstandard hours (defined in the current study as work hours outside of the typical 8 a.m. to 4 p.m. schedule) and perceived racial discrimination as distal contexts in which the child does not participate, but that may have great influence on proximal parenting behaviors and language outcomes for African American children. In the proposed conceptual model, two constructs represent variables that are typically used in studies of children’s language development – maternal psychological functioning and parent-child interactions. As depicted in Figure 1, psychological functioning and parent-child interactions mediate the relationship between work and economic conditions and children’s early expressive language outcomes. Positive parenting skills and language input are used as indicators of parent-child interactions and are the most proximal predictors of child expressive language outcomes. A global measure of maternal distress is used as an indicator of maternal psychological functioning, it also is explored as a possible mediator of the effect economic and work conditions on child expressive language.

The more distal constructs denote a unique effort of this dissertation to incorporate variables that distinguish the African American family experience. In the conceptual model employment conditions are highlighted as predictors of maternal distress and mother-child interactions. African American workers are disproportionately employed in jobs that have nonstandard work hours; however, few studies have examined the combination of quantity and quality of employment among African Americans and
how these features of work spill over into family dynamics. In addition, income-to-needs ratio is used as a measure of household economic conditions and is a primary predictor of proximal processes. The proposed model suggests that economic and work conditions may impact parent-child interactions and maternal distress. Finally, the most distinctive construct of the model is perceived racial discrimination. Perceived racial discrimination is a social construct that has pervasive adverse effects on the mental health of African Americans (Williams & Williams-Morris, 2000). Racial discrimination differentiates the African American experience (from that of the majority culture) via its potential to restrict upward economic mobility and restrict access to important resources protected by white privilege. In the proposed model, perceived racial discrimination will be examined as a moderator of the impact of nonstandard work conditions on mother level (psychological distress and parent-child interactions) and child level (expressive language) variables.
CHAPTER TWO

Theoretical Foundation

The conceptual model offered in Figure 1 provides a framework for understanding direct and indirect influences of contextual factors on children’s language early language development. The model assumes that broader environmental contexts influence family processes and as a result, children’s language development. The model posits that for African American families, a holistic consideration of economic, work and social conditions may better explain differences in children’s early language development. In presenting the conceptual model that supports this dissertation, two theoretical perspectives will be reviewed. First, the Ecological Systems Theory will highlight the distal contexts and proximal processes that are hypothesized to impact children’s expressive language. The Family Stress Theory will be used to more clearly articulate the mechanisms by which the proposed external factors impact children’s language outcomes, particularly in African American families.

Ecological Systems Theory.

The Ecological Systems Theory describes the ways in which parent-child interactions vary as a function of immediate and remote environmental contexts (Bronfenbrenner, 1998). According to ecological systems, the contexts of child development can be organized as a set of nested systems. From the most proximal to distal, the nested contexts include the microsystem, the mesosystem, the exosystem and
the macrosystem (Bronfenbrenner & Morris, 1998; Bronfenbrenner, 1986). The microsystem includes immediate environmental contexts in which children interact at a given point in time. The family unit is one important microsystem in which parent-child interactions have consequential implications for children’s early development. According to Bronfenbrenner, the proximal processes within the family may be the most powerful predictors of early development. The mesosystem includes the interrelations and connections among microsystems and the reciprocal influences between multiple settings and the child. Work and family are social microsystems that interact at the mesosystem level. The exosystem is represented by environments in which the child is not directly involved, but still may have consequences for development. Finally, the macrosystem includes broader social mechanisms and institutions. Macrosystemic influences may have cascading effects and influence the nature of development at all other levels of the ecological system.

Although the family is the primary context in which child development takes place, external systems have the potential to influence intrafamilial processes in a variety of ways. Bronfenbrenner (1986) highlighted parental work environments as part of the exosystem that may influence the way parents interact with their children. This dissertation argues that it is not simply employment, rather it is the stressors of working nonstandard shifts that have the most consequential implications for families. Previous research suggests that the content of work activities along with financial hardship created by low-wage employment may impact child development through their influence on parenting (Conger et al., 2002; Han, 2005; Joshi & Bogen, 2007; McLoyd, 1990).
A second external stressor that may be unique to African Americans is perceived racial discrimination. Although negative racial attitudes towards African Americans have become less overt, racial oppression continues to be reported by various minority groups in the United States. Considered to be a macrosystem factor, perceived racial discrimination is thought to amplify other contextual stressors (such as work and economic factors), resulting in stronger negative associations with maternal psychological functioning, intimate-partner relationships, and parent-child relationships (Murry, Brown, Brody, Cutrona, & Simons, 2001; Peters & Massey, 1983; Vernon-Feagans, Odom, Pancsofar, & Kainz, 2006). Thus, perceived racial discrimination is a variable that should be accounted for when studying developmental processes of children in African American families.

In his elaboration on contexts of child development, Bronfenbrenner (1986) argues that external and remote environmental contexts are reflected in the way proximal processes are differentiated. In other words, distal influences such as work conditions and economic disadvantage, may affect the manner in which proximal processes are played out between parents and children. Proximal processes are the primary mechanisms producing child development (Bronfenbrenner & Morris, 1998). Proximal processes include reciprocal interactions between a child, symbols, and objects in his or her immediate environment that become progressively more complex as children mature (Bronfenbrenner & Morris, 1998). For example, proximal processes include parents’ scaffolding of children’s language development through conversation and reading.

Research on language development provides a model for the application of ecological systems theory. Children’s language development occurs in multiple contexts.
Through daily interactions with parents, teachers, friends, and extended family members, children acquire verbal and language ability. However, the quantity and quality of language that children are exposed to, may be influenced by factors external to that child’s immediate environment. Language research has consistently shown that low-income parents and parents with little education use fewer words and a less diverse vocabulary when interacting with young children (Hoff-Ginsburg, 1991; Hoff, 2003; Vernon-Feagans, Pancsofar, Willoughby, Odom, Quade, Cox, in press). In addition parenting style has been linked to child language development. Maternal sensitivity in the home environment has been shown to be a partial mediator of the relationship between maternal education and family income-to-need and child language (Raviv, Kessenich & Morrison, 2004). There is a need to gain further understanding of processes that underlie poverty and its link to children’s language. In this study maternal language input, maternal sensitivity and maternal depression will be examined as constructs that mediate the relationship between poverty and children’s expressive language.

Finally, if exosystem forces are viewed as sources of variation in processes that influence language development across families, then a closer examination of variables that characterize the distal contexts is warranted. Distal contexts that characterize the family environment will be represented by a combination of variables including income-to-needs, total work hours per week, and job shift. Finally, although perceived discrimination has not been examined as a factor that may influence parent language input, research on parent-child relationship quality suggests that the use of this construct may elucidate important processes that may otherwise go unexamined (Garcia-Coll et al., 1996; Murray et al., 2001). This study suggests the economic reward and quality of
parental employment (as suggested by work shift), along with perceived racial discrimination influence parental contributions to children’s language development.

*Family Stress Theory.*

The Family Stress theory integrates psychological stress as a ubiquitous contextual variable into the study of family relationships. Stress arises as a consequence of engagement with social institutions that sustain patterns of conflict and distress. For many families stress does not simply arise from one unfortunate experience, rather a particular experience may heighten existing distress due to exposure to a broad range of negative life experiences (McLoyd, 1998; McLoyd & Enchautegui-de-Jesus, 2005). The insertion of stress into the family system compromises parent-child relationships, making interactions more conflicted and less responsive.

The Family Stress theory provides an important model of mediation for examining social and economic stressors in disadvantaged families. Parents who experience distress as a result of financial hardship are more depressed, experience lower levels self-efficacy and mastery, and are more punitive in their interactions with their children (Conger et al., 2002; McLoyd, 1990). From previous research, we know that economic hardship presents difficulties for caregivers. The work of Elder and colleagues on Depression era families suggest that the negative impact of economic disadvantage on children is derived from the effect of economic pressures on the emotional stability and behaviors of parents (Elder, Nguyen, Caspi, 1985). McLoyd (1990) further developed this model of family stress to describe the ways in which poverty influences family processes and children’s social-emotional adjustment among African Americans.
McLoyd suggests that poverty diminishes the ability of parents to engage in supportive parenting. Psychological distress, derived from the pileup of negative life events and undesirable environmental conditions, influences the quality of care parents provide for their children. Although McLoyd’s model originally focused on children’s social-emotional outcomes, the model may also be used to understand child development within the cognitive domain. Most recently, Neivar and Luster (2006) used McLoyd’s theoretical model to examine relations among income, psychological distress, parental warmth and children’s language outcomes. The sample included African American children between the ages of 4 and 9, drawn from the National Longitudinal Survey of Youth (NLSY). The study found that lower income mothers experienced greater levels of psychological distress, and psychological distress was associated with poorer cognitive stimulation in the home. Low cognitive stimulation was, in turn, associated with more limited receptive vocabulary scores.

Similarly, this dissertation suggests that occupational conditions, such as nonstandard work hours may also impact the mental status of parents; however, fewer studies have explored work conditions and its effects on parenting resources or child outcomes. Work characteristics, such as nonstandard shift, represents a factor within the exosystem that may disrupt or change the quality of parent-child interactions. In this study, I hypothesize that employment during nonstandard hours, a variable that represent the quality of parents’ employment, impinges on parental psychological resources and influences parenting as well as language outcomes for children.
Integration of Ecological Systems and Family Stress

Together the Ecological Systems theory and the Family Stress theory allows for a closer examination of the influence of environmental contexts on children’s language development. Through proximal processes children learn how to communicate, using the language and symbols provided to them by their parents. However, distal processes occurring in the child’s exosystem and macrosystem also influence the processes occurring within the child’s immediate contexts. That is, if a parents’ work schedule and income earned (or lack thereof) from employment are stress-inducing, these external contexts may impact children’s language development via their influence on the adult’s ability to engage the child in meaningful interactions. Moreover, macrosystem factors, such as racial oppression and discrimination may moderate the impact of exosystem factors, like the demands of a nonstandard shift, on child language outcomes.

One of the unique challenges for African American parents is to successfully raise their children in a racist oriented society. Thus, racism and the response to racism must be included in any interpretation of child rearing in Black families. The politics of discrimination are bound together in a spiraling confluence of macrosystem factors that can profoundly affect the family and their children (Garcia-Coll et al., 1996; Odom, 2007; Vernon-Feagans, Odom, Pancsofar, Kainz, 2005). The interrelatedness of the exosystem and macrosystem within an African American sample will be explored as contexts that may diminish a parents’ psychological resources that would otherwise be dedicated to parenting. The roles of family economic condition and parental work schedules are representative of exosystem factors. Perceived racial discrimination will represent forces within the macrosystem. As suggested by the theoretical rationale, this
model proposes that psychologically stressful parenting contexts created by high levels of perceived racial discrimination, low-income, and poor working conditions all fuse to form an interacting system of oppression that may have negative implications for early language development for African American children.
CHAPTER THREE

Literature Review

Introduction

Many factors related to economic status have been linked to the developmental skills of young children. It has been well established that children from higher income families have greater access to materials and resources that support their cognitive and language development than children in lower income families (Bradley & Corwyn, 2002; Hart & Risley, 1992; Guo & Harris, 2000). Moreover, the indirect effect of income on children’s language development and later academic competence has been evidenced via parental responsiveness and psychological distress (Bradley, Corwyn, Burchinal, McAdoo, & Garcia-Coll, 2001; Guo & Harris, 2000). Although factors that are indicative of the quality of the home environment have been implicated as mediators of the effect of income on child outcomes, external predictors of these mechanisms have not been fully explored. This review of literature considers family income-to-need and maternal work schedules as distal predictors of mother-child proximal processes and children’s language development.

Language is part of the early experience of all children in their everyday routines. Although the amount of talk, the diversity of talk, and the sensitivity of the communication interaction provided by mothers is correlated with children’s language development (Hoff, 2006), this relationship ignores the well-established influence of distal factors, such as economic, work and social factors on parenting. Children’s ability
to understand and produce language results from both proximal and distal environmental influences. Distal factors are hypothesized to shape development via environmentally transmitted influences on parenting processes in the home (Bronfenbrenner, 1986). This dissertation suggests that family poverty level (income-to-needs), maternal work schedules, and social experiences around racism influence the quality of the parenting environment and as a result, indirectly impacts children’s language development.

This literature review is structured to elaborate on the constructs of the model previously presented. A section that presents empirical findings in relation to the predictor variables, income and work schedules will lead. Findings related to the mediator, psychological distress, will follow. The review of psychological distress will focus on economic conditions as a predictor of psychological functioning and the impact of distress on children’s language ability. Next, parent-child interaction styles will be examined as a mechanism though which family economic and nonstandard work schedules impact early expressive language development. Parental language input and positive parenting skills (engagement/sensitivity) are the variables of interest. Finally, two moderator variables, perceived racial discrimination and partnership status will be reviewed.

**Income and the Early Language Development**

National statistics indicate very poor economic conditions for many American children. Between 2000 and 2005 the number of children living in poverty increased by 11 percent, despite indications of overall economic growth in the United States during this time period (Fass & Cauthen, 2006). In 2006, nearly 13 million children lived in
families with incomes below the federal poverty level, which is $20,000 per year for a family of four. Although the federal poverty level is consistently used as an indicator of economic hardship, it often underestimates the economic need of families. On average, families need an income of twice the poverty level to make ends meet (Douglas-Hall, Koball, & Chau, 2006).

Of the 73 million children in the United States, 39% live in low-income households. Families with incomes at or below 200% poverty are referred to as low-income. Most children living in low-income families have at least one parent who works full-time, year round (estimated at 55%, Douglas-Hall, Koball, & Chau, 2006). Even when parents earn an income above the poverty-level, families may still experience economic instability. The jobs of low-income workers are characterized by high turnover, limited opportunities for advancement, and low-wages (NCCP, 2005 http://nccp.org/pub_fei.html), as a result these families are subject to the volatility of economic markets.

There has been a recent rise in poverty for all children, yet poverty rates for African American children even more dramatic. In 2006 35% of African American children lived in poverty whereas only 10% of non-Latino White children lived in such circumstances (Fass & Cauthen, 2006). In rural areas, the statistics are even more disparate. While the poverty rate for Whites in rural areas is 11%, it is up to three times greater for Blacks and Hispanics (33% and 27%, respectively) (Jolliffe, 2004). Moreover, forty-six percent of all non-hispanic Black children in rural areas are poor (the sample for this dissertation will be drawn from a study of rural families). Secondly, although African American parents are likely to work full time, they are more likely to be
employed in low-wage jobs and earn less than poverty-level income (McLoyd, 1990). Moreover, Black adults are more susceptible to underemployment and unemployment which can be attributed to historical vestiges of institutional discrimination (McLoyd & Enchautegui-de-Jesus, 2005). Finally, African Americans are more likely to have lower education levels, fewer skills, less job seniority, and be more susceptible to institutional barriers and structural changes in the economy such as fewer manufacturing jobs and movement of jobs to suburban areas (McLoyd & Enchautegui-de-Jesus, 2005).

A substantial body of literature has linked low income to risk for delays across domains of cognitive development and academic competence (Guo & Harris, 2000; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; Nievar & Luster, 2006; McLoyd, 1998). In particular, children of families living in poverty consistently score below average on measures of language development (Fish & Pinkerman, 2003; Raviv, Kessenich, & Morrison, 2004). Even when factors such as parental education, mother’s age at birth, family, structure, and residential location are controlled for, effects of poverty remain evident for children’s developmental outcomes (Duncan & Brooks-Gunn, 1997). Although poverty has frequently been used as an indicator of the conditions of children’s developmental environments, it is a marker variable rather than process variable and does not adequately identify specific family processes that influence child outcomes. As a consequence, it is important to test for potential mediators when examining associations between income and child language facility.

The family processes that link between poverty and socioeconomic status to child developmental outcomes appear to be similar among African American and European American families. Low income influences family relations and child adjustment
through increasing emotional distress of caregivers (Conger et al., 2002; Jackson et al., 2000; McLoyd, 1990, 1998; McLoyd, Jayarante, Ceballo, & Borquez, 1994). Greater exposure to low income places families at greater risk for disrupted family relations and maladjustment. Conger and colleagues (2002) extended the family stress model to a rural Black population of households with two caregivers in the home. As in prior research, low income and negative financial events were robust predictors of economic pressure. Moreover, economic pressure accounted for nineteen to 22% of the variance in parental depressed mood. More recently, Nievar and Luster (2006) showed an indirect effect of income on reading recognition via maternal psychological distress and parenting style.

Given the association between risk for developmental competence and low economic circumstances, the effect of income on language outcomes for African American children may warrant further examination. Because African American families are more apt to experience extended periods of poverty circumstances than are White families, economic conditions may have stronger negative effects on African American children’s developmental outcomes (Garcia-Coll, et al., 1996). This dissertation proposes that the income-to-need ratio of a household plays an integral role in the prediction of children’s expressive language ability. In addition to accounting for other household demographic and characteristics of the mother and child (education, age, marital status, current receipt of welfare, child’s age, and total hours of child care per week), it is hypothesized that income-to-needs negatively predicts child expressive language. However, it is expected that involved and stimulating parenting and maternal psychological distress may play a mediating role the relationship between economic conditions and children’s expressive language outcomes.
Work Schedules and Early Language Development

There is a growing literature on the work-family interface. Work conditions are associated with income and are a primary mechanism by which social class impacts the parenting environment (Kohn, 1979; Luster, Rhoades, & Haas, 1989). As suggested by Figure 1, job hours and job shift may influence early language development indirectly through maternal psychological distress and parenting skills. The review that follows suggests that the quantity and quality of maternal work schedules are integral in understanding family processes and their influence on children’s expressive language, even beyond the effects of poverty.

Maternal Job Hours. Most research studies have focused on the effects of maternal employment status (versus not employed) on child development rather than characteristics of employment. The overall research on the effects of maternal employment has not produced clear, unequivocal findings on whether maternal employment is deleterious for children’s outcomes. Although some studies show benefits of maternal employment for children’s cognitive development through better maternal mental health and positive parent-child interaction (Hoffman & Youngblade, 1999; Huston & Aronson, 2005; Dunifon, Kalil, & Danziger, 2003), other studies have found negative effects of maternal employment on children’s cognitive and language abilities (Brooks-Gunn, Han, & Waldfogel, 2002; Han et al., 2001; Parcel & Menaghan, 1990). Still, other studies find only minimal effects of maternal employment for children’s outcomes (Harvey, 1999). A recent meta-analysis highlighted the importance of the evaluation of a range of social contextual variables when determining the impact of
maternal employment on child outcomes and implicated sample characteristics as a source of variation in the overall literature (Goldberg, Prause, Lucas-Thompson, Himsel, 2008).

Most prominently, the literature on mothers’ employment and its implications for family processes has focused almost exclusively on European American families. Less is known about African American families. Yet, African Americans are more likely to experience negative occupational conditions such as low wages, unemployment, and underemployment. Interestingly studies that have explore maternal employment and early child outcomes, have either utilized samples of White families or had racially/ethnically diverse samples, but did not identify effects by racial or ethnic groups (Han, Waldfogel, Brooks-Gunn, 2001; Hoffman & Youngblade, 1999; Huston & Aronson, 2005). In studies that have indicated negative effects of employment within racially mixed samples it is often unclear if effects are due to income or other demographic or contextual factors (Goldberg, Prause, Lucas-Thompson, Himsel, 2008). Increasingly, a number of investigators have argued for the utility of examining variables related to variations in work quantity and quality, particularly in low-income samples (Parcel & Menaghan, 1994; Perry-Jenkins, Repetti, & Crouter, 2000; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; Raver, 2003).

One measure of work conditions is the quantity of hours worked per week. Parents vary widely in the amount of time they are employed outside of the home. Some jobs demand extensive overtime, while others require full-time schedules, and other jobs allow for part-time schedules. Parents who spend long hours on the job may be less engaged in parenting due to stress, even when they are physically present in the home. In
contrast, parents who do not work enough hours to supply for the material needs of the family may also suffer from mental distress. Physical and mental distress leaves parents less likely to engage in sensitive interactions with their children. This dissertation suggests that parental work hours matter for children’s expressive language development.

Researchers typically refer to involuntary employment that is less than full-time or jobs with poverty-wage earnings as underemployment (Jensen & Slack, 2003). As the United States economy has been restructured away from a plentiful supply of manufacturing jobs toward more service oriented jobs, concerns have grown over employment adequacy. Service jobs are often unstable, poorly paying, and part-time, lacking in benefits and opportunities for advancement (Jensen & Slack, 2003). Concurrently, time limits in welfare reform have buttressed an influx of low-skilled, less educated workers into the labor market who are most vulnerable to the economic implications of this change.

Insufficient work hours have been associated with reduced quality home environments. Dooley, Prause, and Ham-Rowbottom (2000) found that shifts from adequate to underemployment significantly increased depressive symptoms for workers at a level similar to that of moving from adequate employment to unemployment. Crouter and colleagues (2006) found that mothers’ part-time employment predicted more depressive symptoms among her children and spouse than when she worked full-time. These findings suggest that depression derived from underemployment may predict negative outcomes for children.

Similarly, increases in parental work hours have also been associated with negative child outcomes. Parcel and Menaghan (1990) showed a nonlinear effect of
maternal work hours on three- to six-year-olds’ receptive vocabulary. Relative to children of mothers who work full-time (35-40 hours), children of mothers who work overtime (over 40 hours per week) have lower levels of verbal facility, while mothers who work 21-35 hours per week have children with higher levels of verbal facility. Children of mothers who work less than 21 hours per week showed no significant difference on receptive vocabulary than children of mother working full-time. The results suggest that mothers who work more than a full-time schedule may put their children at greater risk for language delay than mothers who work shorter hours. Data from the NICHD Study of Early Child Care also showed that maternal employment over 30 hours per week when children were 9 months predicted poorer school readiness scores by 36 months. Long work hours may be even more costly to children’s developmental outcomes, when long hours are associated with the stressful conditions of low-income (Raver, 2000; Jackson et al, 2003). As a result, this dissertation suggests that researchers must also analyze conditions of work, other than employment versus unemployment, to unpack costs and benefits for outcomes for African American children.

This dissertation proposes that the number of hours that a worker is employed plays an integral role in the prediction of children’s expressive language ability. Time spent at work is a parameter that dictates the amount of time parents can spend at home with their children. On the other hand, time could also represent a dimension of availability of adequate employment. Thus, too many hours of employment and too few hours may be equally less beneficial for children. Beyond demographic characteristics of mothers and children, it is hypothesized that maternal work hours may have a nonlinear effect on child expressive language. Secondly, it is hypothesized that involved and
stimulating parenting and maternal psychological distress may play a mediating role the relationship between work schedules and children’s expressive language outcomes.

*Maternal Job Shift.* A final feature of work conditions that potentially influences the parenting environment is job shift. Given the twenty-four hour consumer economy of American society, it should be expected that some workers will have job schedules during non-standard hours. Nonstandard work hours include those outside of the typical 9 a.m. to 5 p.m. work schedule. The variations of the nonstandard work schedule includes evening shifts (4p.m.-midnight), night shifts (midnight-8am), irregular shifts (day or night as determined by employer), or rotating shifts (changes periodically from days to evenings or nights) (Presser, 1997). Although nonstandard work schedules are evident throughout the occupational hierarchy, most are evident in the low-wage service sector and among individuals with little education. The literature on economic hardship and family stress indicates that the exposure to low-income and the pile-up of other potentially stressful circumstances (like employment during nonstandard work hours) places families at greater risk for disrupted family relationships and maladjustment among children (Conger et al., 2002; McLoyd, 1990, 1998). However, the research literature is just beginning to uncover the impact of nonstandard work schedules as a stressor on family processes.

Demographic data indicate that individuals with particular characteristics are likely to be employed during nonstandard work hours. Nonstandard work hours are highly prevalent in jobs that provide services needed at all hours – protective services, food, transportation, hospitals – and among operators, fabricators (cars), and laborers
(Beers, 2000). In addition, African Americans are more likely to have to work nights and evennings than their White counterparts across middle and low income brackets (Heymann, 2000; McLoyd & Enchaugtegui-de-Jesus, 2005). In 2001, 12% of African Americans worked night and evening shifts, as compared with 7% European Americans. More importantly, a total of 20% of African American workers were employed with full-time, non-day shift schedules, as compared with 13.6% of European American workers (as reported in McLoyd & Enchaugtegui-de-Jesus, 2005 from U.S. Census, 2002).

The negative health implications for individuals with nonstandard employment may have spill-over effects into the home and family life of workers. Nonstandard work hours are associated with insufficient sleep, problems with digestion and elimination, increased risk of cardiovascular disease, irregular eating times, mental health problems, and marital and family discord (McLoyd & Enchaugtegui-de-Jesus, 2005; Presser, 2003; Presser, 2000; Staines & Pleck, 1984). The adverse effects of nonstandard work schedules on parental well-being have begun to raise concerns about the direct and indirect effects of non-daytime employment on parents’ ability to address the needs of their children, and as a result, children’s outcomes.

A few studies have found negative consequences of evening and nonstandard shifts on children’s cognitive outcomes. Examining school-age children in the National Longitudinal Survey of Youth, Heymann (2000) found that working evenings and nights put children at risk of academic failure. Children whose parents worked evening shifts were more likely to score in the lowest quartile of the Peabody Individual Achievement Test of Mathematics. Negative effects of nonstandard schedules on cognitive outcomes have also been found among children younger than school-age. In a study by Han
(2005), it was determined that among a moderate income sample of employed mothers, 50% had worked nonstandard hours during the first three years of their child’s life. Importantly, children’s whose moms worked nonstandard hours throughout their first 3 years of life had poor cognitive outcomes. The negative association was stronger if moms started working nonstandard hours in the first year of the child’s life, particularly for mental development (sensory perception, memory, learning, problem solving, early verbal communication) and expressive language. Other studies have not found any distinct effects of nonstandard schedules on children’s cognitive outcomes. Among children 6 years of age and older in low-income families, Phillips (2002) found that working night shift was not related to school engagement. Examining the New Hope Project Child and Family Study sample of school-age children (included families with children ages 5-12 at the 2-year follow-up), Hsueh and Yoshikawa (2007) did not find a significant effect of nonstandard schedule on teacher- or parent-reported school performance or academic achievement when controlling for previous outcomes.

Parental employment during nonstandard hours may have negative implications for children’s language development; however previous findings seem to be inconsistent. Researchers have suggested that disparate findings of the effect of nonstandard schedules on child development outcomes may be an issue of longitudinal versus cross-sectional data (Han, 2006). Longitudinal data is better able to capture variability as it occurs, and as a result researchers may be more likely to capture “sleeper” effects of nonstandard schedules on later development (Gottfreid & Gottfried, 1988). As such, the current dissertation follows a sample of low-income, children and families across two timepoints. Maternal and child demographic factors at 15 months are used as predictors of children’s
24 month language outcomes. Secondly, differences in previous findings may arise from dissimilarities in demographic characteristics among samples. While some studies of moderate income families and studies that compare low- and high-income samples have found negative effects of nonstandard employment hours on child cognitive and academic outcomes (Han, 2005, 2006; Heymann, 2000), studies that have focused specifically on low income samples have not indicated strong consistent effects across child outcomes (Hseuh & Yoshikawa, 2007; Phillips, 2002). For low-income workers, working nonstandard schedules is most often a requirement of the job rather than a job preference (Presser & Cox, 1997). Yet, if a parent has chosen a nonstandard schedule because no other job can be found, parenting stress may increase, having detrimental effects for child cognitive outcomes.

This model would allow for an in-depth examination of job shift in a low-income African American sample. More nuanced information will be obtained using a single-race sample, allowing for interpretations that would otherwise be obscured in a racially heterogeneous sample. This dissertation proposes that the shift of parents’ employment plays an integral role in the prediction of very young children’s expressive language ability. Beyond demographic characteristics of mothers and children, it is hypothesized that work conditions, like job shift significantly predict child expressive language, maternal psychological distress, and parent-child interactions. Secondly, it is hypothesized that involved and stimulating parenting and maternal psychological distress may play mediating roles the relationship between nonstandard schedules and children’s expressive language outcomes.
Maternal Proximal Predictors

Maternal positive parenting as a mediator of shift schedule. Through talk in the early years, caregivers provide exaggerated clues about speech segmentation and provide attentional focus and feedback on how, when and where to make appropriate utterances (Hoff, 2006). Communicative opportunities may depend on the level of enjoyment between the relationship partners (Locke, 2001; Hoff, 2006). Even in the first year of life, children begin participating in verbal turn-taking. Parents’ timely and contingent response to communicative bids can either terminate or sustain a conversation (Dunst, Lowe, & Bartholomew, 1989). Parents who are responsive to a child’s verbal bids support advances in language by pointing, providing labels, and fine-tuning the content of their utterances to match their child’s level of understanding (Hoff, 2006; Pan et al., 2005; Tomasello & Farrar, 1986).

Several aspects of maternal behavior have emerged as salient predictors of children’s language development including positive affect and responsivity. Mother-child interactions that are defined as sensitive and responsive predict gains in children’s early language milestones and later preschool expressive language abilities (Fish & Pinkerman, 2003; Raviv et al., 2004; Tamis-LeMonda, Bornstein, & Baumwell, 2001). Importantly, maternal interactive behaviors are partially a function of environmental sources of influence (Hoff, 2006). Effects of exosystem and macro-level variables such as income, the conditions of work, and perceived racial discrimination may affect the psychological availability of parents as a communicative partner and the sensitivity of language interaction provided by that parent. As such, external social contexts that may
impact children’s outcomes via the level of support provided within parent-child
interactions should be explored for further consideration.

Previous research suggests that family income is associated with the quality of
interactions parents provide in the home (Garrett, Ngandu, & Ferron, 1994; Guo &
Harris, 2000; Raver, 2003). Moreover, the influence of family poverty on children’s
language and reading development has been shown to be mediated by parenting style
(Guo & Harris, 2000). Although the effects of poverty and education on child outcomes
have been widely documented, there is minimal research on the interactions of African
American children and their mothers and how those patterns of interaction mediate the
impact of poverty on language development.

The limited research that exists on African American mothers and their children
suggests that mother’s sensitivity and responsivity facilitates communicative and
expressive language skills (Burchinal, Roberts, Hooper, & Zeisel, 2000; Wallace,
Roberts, & Lodder, 1998). African American mothers with lower levels of education and
poorer economic circumstances have been characterized as having a directive style when
interacting with their children, while higher SES mothers tend to ask more questions,
eliciting conversation (McLoyd, 1998; Hammer & Weiss, 1999; Heath, 1983; Hoff
2003). It has been shown that children of mothers who engage in this conversation
eliciting style begin to talk sooner and reach basic language developmental milestones
more rapidly than mothers who are less responsive (Tamis-LeMonda, Bornstein, &
Baumwell, 2001). Although asking questions and producing statements can be
considered as intrusive as producing commands (Pine, 1992), research indicates that
contingent, responsive interactions are most supportive of language learning (Hoff, 2006;
Raviv et al., 2004; Tamis-LeMonda, Bornstein, & Baumwell, 2001). This dissertation suggests that mother-child interactions within this sample of African American families are altered through the effects of stressful distal contexts of poverty, too few or too many job hours, and nonstandard job shifts; in turn, providing variation in the degree to which mother-child interactions support children’s expressive language outcomes.

There are a limited number of studies that examine parents’ shift work schedules as a background characteristic that may have implications for the home environment. Using the NLSY data from 1990, Heymann & Earle (2001) found that having at least one parent work an evening shift led to a 10% decline in the amount of cognitive stimulation and emotional support for above- and below-poverty level families. When mothers worked evenings an 11% decrease in the HOME score occurred and when fathers worked evenings an 8% decrease in the HOME score was evidenced. Both negative effects for mothers’ and fathers’ evening work on the home environment were of the same order of magnitude as living in poverty. The similarity in magnitude of effects of nonstandard work hours and poverty provides some initial evidence that more research is warranted on the effects of nonstandard shift work on family functioning, given the possible negative implications for the parenting environment. Focusing on children from birth to age 3 in a higher income sample, Han (2005) also found a negative association between nonstandard work schedules and children’s cognitive development, were partially mediated by maternal sensitivity and the quality of the home environment.

This dissertation will contribute to the literature on African American families by examining the role social contexts play in shaping language development. It is expected that distal contexts shape the language environment of children through the quality of
parenting support. More specifically, differences in the level of positive interactions mothers provide are shaped by economic and work conditions. It is hypothesized that positive, engaged parenting will positively predict children’s expressive language above and beyond more distal economic and work variables. Finally, this dissertation suggests that positive parenting is a mediator of the effects of parental nonstandard work conditions on children’s expressive language.

Maternal Psychological Distress as a mediator of shift schedule. The literature on the negative effects of working nonstandard schedules and its toll on adults’ psychological (e.g., depression), physical (e.g. fatigue), and social (e.g., marital instability) well-being has been well documented (Presser, 2000). Moreover, researchers have consistently found that mothers who are depressed are less involved in their children’s lives and provide less sensitive care which may in turn lead to less optimal developmental outcomes (McLoyd, 1990; NICHD ECCRN, 1999). Given the facts indicating that African Americans and women with preschool-age children are overrepresented in jobs that employ their workers during nonstandard hours (Presser & Cox, 1997; McLoyd & Enchautegui-de-Jesus, 2005), it will be important to determine the process variables that explain the association between non-standard work schedules and developmental outcomes for children in an African American sample.

The experience of living with a mother who is psychologically distressed is likely to have consequences for language as a developmental domain, given the contingencies required in a communicative interaction. Psychological distress is characterized by aspects of sadness, fatigue, irritability, and emotional withdrawal (APA, 1994) as well as
general stress over life events. Psychologically distressed parents have been found to be less responsive to child behavior, communicate less effectively, demonstrate lower synchrony with infants, and have fewer positive interactions with their children (Lovejoy, Graczyk, O’Hare, & Neuman, 2000).

Psychological distress may compromise the quality of maternal behaviors in proximal processes during language acquisition. Mothers with depression tend to feel less self-control and talk less to their children (Lovejoy et al., 2000). As a consequence, maternal depression may contribute to poorer language outcomes for young children. In a study based on the NICHD Study of Early Child Care, mothers who reported being depressed had children with lower levels of expressive language than mothers who never reported depression (NICHD ECCRN, 1999). Moreover, psychological distress has been shown to mediate the effects of economic status on children’s developmental outcomes. Linver and colleagues (2002) found that maternal depression at 12 and 24 months mediated the effects of family income on children’s cognitive development by preschool. The negative effect of low maternal academic aptitude on child reading recognition has also been shown to be mediated by psychological distress (Nievar & Luster, 2006).

Distress may have particularly detrimental effects during the early childhood years. Research suggests that a critical window of opportunity for language acquisition begins around 24 months and lasts until children’s third year (Pan et al., 2005). Mother’s depression status during this time period may have important implications for child language production. Pan and colleagues examined the effects of depression in a group of low-income mothers and their children. Children were entered into the study at 14 months and followed until they were 36 months. Maternal depression status at 14 months
was related to the trajectory of growth in children’s expressive language. By 24 months a child whose mother scored in the 90th percentile of depression at 14 months produced about 4 fewer different words than a child whose mother scored at the 10th percentile. By 36 months the gap had grown to 20 fewer words of lexical diversity.

Research has come to demonstrate the utility of examining children’s language development in the context of proximal and distal contexts. There is considerable variability in the quality of parent-child directed speech that can be accounted for by environmental influences like psychological distress. The effects of psychological distress may be compounded by distal factors such as poverty and work conditions. McLoyd (1990) proposed that in African American families economic disadvantage takes a toll on the psychological well-being of parents. The strain of economic disadvantage may contribute to feelings of depression in parents (Conger et al., 2002; McLoyd, 1990, 1998). More recently, studies focusing on working parents have also found negative effects of nonstandard work schedules on depression. Among new parents, working nonstandard schedules in the first year of the child’s life is associated with increased depression (Perry-Jenkins, Goldberg, Pierce, & Sayer, 2007). However, the few studies that have attempted to extend these findings to child outcomes have not found consistent effects. In a sample of low-income working mothers, Joshi and Bogen (2007) evidenced the negative effect of nonstandard work schedules on children’s behavioral outcomes through parenting stress. However, another recent study looking at low-income families did not find parental distress to be a mediator of nonstandard work schedules of children’s school performance (Hseuh & Yoshikawa, 2007). Due to the vast historical literature that relates maternal psychological well-being particularly to communication
and language outcomes in early childhood, this dissertation suggests that the psychological distress is a potential mediator of the effects of nonstandard work schedules on children’s expressive language.

*Parental Language Input as a mediator of shift schedule.* Generally, the more words children hear, the more words they produce. Parents who direct more speech to their children have children with larger vocabularies over time (Hart & Risley, 1995). In addition, mothers who use longer utterances, use richer vocabularies and expose their children to a greater number of different words have children who with more advanced language ability (Hoff, 2003). The more different words children hear, the more different words they may learn (Pan, Rowe, Singer & Snow, 2005). Thus, quantity of maternal input and diversity of maternal language are two factors that differentiate children’s lexical development.

Parents with lower socioeconomic status tend to talk less to their children and use fewer different words. Hart and Risley (1992, 1995) found that socioeconomic status was highly correlated with the amount of language exposure children received. Higher income parents talked to their children using nearly 5 times more words than low-income parents. Over time, children of low-income mothers, who used less varied vocabularies, fell progressively further behind their middle-class counterparts. More recently Hoff (2003) longitudinally examined SES difference in children’s language-learning experiences. Sixty-three mothers, from high-SES and mid-SES backgrounds, and their 20 month old toddlers participated in the study. Mothers were split into two groups, one group included mothers with a high school education, the second group consisted of
mothers with a college education. At the start of the study children all began at the same language level. Eight months later, Hoff found that college educated mothers compared to high school educated mothers produced more utterances, more total words, more different words, had longer utterance lengths and produced more topic continuing replies. Over the eight months, children of college educated mothers gained more productive vocabulary than children of high school educated moms, a finding that was attributed to college educated mothers’ longer utterance length.

The previous examples suggest one mechanism through which language environments differ by SES – parental language input. More advantaged families use more words and a greater diversity of words when interacting with their children. Although SES differences in early language environments have come to be expected among many researchers, limitations to these studies do exist. Most studies in the language development literature have drawn their findings from small samples that have paid little attention to differences in economic status and ethnic diversity. Even when samples have included poverty level households, the findings have been based on White upper middle-class comparison groups (Hoff-Ginsburg, 1991; Hart & Risley, 1995). However, past studies of rural, low-income African American children indicate that minority children readily engage in complex ways of talking, specifically shown in their storytelling abilities and in arenas outside of the typical classroom setting (i.e., in the neighborhood with friends) (Heath, 1983; Vernon-Feagans, 1996).

Hammer and Weiss (1999) observed low- and middle-income, working class, African American mothers and their children during a play interaction. Unlike many previous studies wherein the comparison group included upper SES professionals, in this
sample no differences were found for the frequency of speech mothers directed to their children. Hammer and Weiss’ attention to participant selection factors has helped to expand thinking about SES and ethnic differences that has been reiterated historically in the developmental literature. In addition, their findings have drawn attention to the implied positive and negative meanings associated with parenting style. Parents may have different goals in helping their children to learn language; however, there is no one right way to facilitate language learning (Hammer and Weiss, 1999). Ethnic diversity and economic differences are clearly associated with differences in the social environment of languages learners. Yet, data is needed for larger samples of mid to lower income African American families so that language experiences within these families can be better elucidated. Recent studies suggest that there is a broad range and variability of language exposure to children within lower income samples (Pan, Rowe, Singer, & Snow, 2005; Rowe, Pan & Ayoub, 2005). This dissertation highlights economic and work conditions within an African American sample as variables that may predict differences in proximal process of children’s language environment.

This dissertation will employ a within-group design. Language outcomes for young children will be distinguished within a sub-sample of African American families. Differences in parental language input will predict differences in expressive language outcomes for their children above and beyond work and economic conditions. This dissertation also suggests that parent-child interactions, like parental language input, is a mediator of the effects of stressful parental work conditions and economic conditions on children’s expressive.
Other Predictors of Early Language and the Parenting Environment

Perceived Racial Discrimination. In American society, people of color, particularly those of African descent, are a marginalized group. Racism has been defined as “an organized system that leads to the subjugation of some human population groups relative to others” (Williams and Williams-Morris, 2000). Given the historical significance of racism in the United States, it remains one of defining contextual variables for people of African descent living in America. The African American population has been characterized by high rates of unemployment, low wages, and low educational levels. It is suggested that racial disparity in economic sufficiency is a legacy of institutionalized racism and inequality in education, employment, and housing (McLoyd & Enchautegui-de-Jesus, 2005; Williams & Williams-Morris, 2000).

Despite improvements in racial attitudes towards minorities in America, African Americans have continued to be subject to prejudicial beliefs about their competence and abilities, often receiving differential treatment by others, including individuals as well as societal institutions. In fact, more than 50% of African Americans attribute substandard housing, lack of skilled labor jobs, and lower wages to ethnic discrimination (Sigelman & Welch, 1991). In addition, although negative racial attitudes have become less overt, surveys continue to show that Whites prefer to maintain a certain level of social distance from minority groups. For example, since 1958 the percentage of Whites who support having their children attend an integrated school has increased (to 99% in 1990); however, this percentage declines as the number of black children in the school increases (Williams & Williams-Morris, 2000). Additionally, although Whites indicate that they are committed to principles of equality, the percentage of Whites supporting federal
intervention in ensuring that blacks received fair treatment in employment has drastically declined since the 1960s (38% in 1964 and 28% in 1996, Williams & Williams-Morris, 2000).

Research suggests that stress induced by experiences of racial bias is one way in which racial status can affect health (Clark, Anderson, Clark, & Williams, 1999). Studies of the effects of racial discrimination on health find a positive relationship between perceptions of discrimination and blood pressure (Williams & Neighbors, & Jackson, 2001). Klonoff, Landrine, and Ullman (1999) found that experiences of racism were strongly related to total psychiatric symptoms, somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, and anxiety among African Americans. Accumulation of experiences of racial discrimination has even been identified as a risk factor for premature births (Collins, David, Handler, Wall, & Andes, 2004).

Although racial tensions are not as overtly apparent as they were prior to and during the Civil Rights era, negative images of Blacks continue to be held by many Whites. Trends in survey data from the 1950s through the late 1990s show that Whites have become more egalitarian in their desire to coexist with Blacks; however, their commitment to policies that eradicate persistent discriminatory practices is lackluster (Williams and Williams-Morris, 2000). Consequently, institutional along with individual practices of racial discrimination create a tenuous psychosocial context within which African American parents raise their children. As a result, parenting within the African American community must be conducted with the knowledge that children may be subject to discriminatory practices in larger society.
Bronfenbrenner (1986) argues that children’s development must be examined within systems of influence. An overarching macrosystem factor that may be experienced by children within families of color is racial discrimination. Socializing children about African American culture, preparing them for experiences with prejudice, and promoting out-group mistrust occur with increasing frequency from around 4-years old until the teen years (Hughes & Chen, 1997). Yet, these direct forms of teaching may not be developmentally appropriate for children at very young ages. In families with young children, it may be more important to study parents’ experiences of racism and children’s well-being. It is hypothesized that parents’ experiences of discrimination precedes the child’s birth and it is likely that these experiences may influence the parenting environment before the child reaches adolescence.

Perceived discrimination is thought to amplify the impact of other contextual stressors on developmental outcomes (Peters & Massey, 1983). Yet, very few studies have examined how parental experiences of discrimination operate on family functioning. Murry, Brown, Brody et al. (2001) explored racial discrimination as a moderator of caregiver stress and caregiver-child relationship quality. As expected, mothers who experienced high levels of stress from a variety of sources presented with more symptoms of depression and anxiety. It was then shown that maternal distress was indirectly linked with mother-child relationship quality through intimate partner relationship quality. Finally, for mothers experiencing higher levels of racial discrimination, stronger links emerged between stressor pileup, psychological distress, and the quality of the mothers’ relationship with the child and intimate partner.
The proposed model highlights the use of perceived discrimination as a moderator of the impact of work conditions on maternal psychological functioning and parent-child interactions. Although previous researchers have looked at these variables in isolation, this model suggests that the combined influence of the two contextual stressors, work conditions and income-to-need, along with perceived discrimination should be examined as predictors of the parenting environment. Throughout American history individual and institutional discrimination have impacted African American’s access to jobs, their attainment of wealth, their places of residence, and their maintenance of health to an extent that may impact developmental outcomes for children (McLoyd & Enchautegui-de-Jesus, 2005). Minorities continue to be blocked from certain work experiences, thus job characteristics that are overrepresented among African Americans are included in this model. Given that discrimination is a contextual stressor that exists throughout the lifespan, the effects of parents’ experiences of discrimination on the early childhood parenting environment should not be overlooked.
Synthesis of the literature

The effects SES differences that are due to economic constraints produces variation in early language production via parents’ ability to provide interactional behaviors that support communication. Insufficient income is one of many characteristics of work that may indirectly impact parent-child relations. From previous research, we know that economic hardship presents difficulties for caregivers. Particularly for those employed in low-wage jobs, the psychological toll exacted from financial hardship may impact a caregiver’s parenting competencies (Conger et al., 2002; McLoyd, 1990). Disrupted parenting may potentially affect children’s developmental outcomes.

As the American economic landscape has changed, the literature has slowly begun to reflect how work schedules impact families and the interactions among its members. Total hours worked and job shift have been implicated in contributing stressful family conditions. The literature suggests that during early childhood, parents’ work experiences are important in understanding parental involvement in childrearing. For example, parents whose jobs are restrictive in terms of time spent in the home, negatively impact parent’s sensitivity. Parents who are mentally and physically stressed from work are less sensitive and may not be actively involved in supporting children’s development. Moreover, researchers have come to realize the paucity of information that exists on the work schedules of parents from low-income brackets, and how income and work conditions function in African American families.

Previous research supports that income has a negative effect on children’s language development. The literature also supports the notion that parental language
input, parental engagement/sensitivity, and distress are processes by which income
influences child expressive language outcomes. When considering contextual stressors in
African American samples, it is also central to address larger social forces such as racism
and discrimination and how its effects cascade through the family system (Murry, Brown,
Brody, Cutrona, & Simons 2001). Perceived racial discrimination creates a context that
may be conducive to ineffective family interactions. This study proposes to identify how
exosystem (family income and maternal work schedule) and macrosystem (perceptions of
discrimination) factors, impact the environment that African American families are able
to provide for their child’s early development (Figure 1). It is hypothesized that the
relationship between the exosystem variables and the more proximal parent level data
(psychological distress and parent-child interactions) will be considerably stronger under
higher levels of perceived discrimination. Although previous researchers have looked at
this complex of variables (employment predicting parental sensitivity OR perceived
discrimination predicting parental psychological stress) in isolation, this study suggests
that the combined influence of the contextual stressors should be examined in an
appropriate sample.

To understand how distal contexts of family economic status and maternal work
contribute to child language outcomes (questions 1 and 2) and parent-child proximal
processes (question 3), hierarchical linear regression analyses were conducted. The
covariates used in the analyses encompassed maternal demographics (mother’s age,
mother’s years of education, current receipt of welfare), family structure (marital
status), and child characteristics (child’s age, number of hours per week in childcare)
that have been suggested by prior developmental studies to be associated with children’s
outcomes. Although the effect of the control variables are important, this dissertation was most concerned with what factors beyond the demographic characteristics of the family predicted children’s expressive language outcomes; therefore, the impact of distal economic and work contexts and more proximal parenting mediators (question 4) were highlighted. As a final source of environmental variation, perceived racial discrimination (question 5) was added to the models predicting parenting and child language outcomes. A standardized measure and more naturalistic measure of child expressive language (derived from the book reading activity) were used as outcome variables. No prior hypothesis was made regarding potential differences in results between the two measures of expressive language. This dissertation addresses the following research questions:

1. What is the contribution of family income at 15 months to children’s expressive language 24 months above and beyond the control variables (Figures 2 and 3)? It is hypothesized that low family income-to-needs at 15 months will predict poorer expressive language for children at 24 months, above and beyond other covariates.

2. What is the contribution of mother’s work schedules (total weekly work hours and primary job shift) at 15 months to the prediction of children’s expressive language at 24 months (Figures 4 and 5)? After accounting for family income-to-need and the associated covariates, it is hypothesized that a nonlinear effect exists between work hours and children’s expressive language facility. Rather, too few work hours and work hours greater than a full-time weekly schedule are both expected to be predictive of lower expressive language ability among children at 24 months. Secondly, it is expected that nonstandard job shifts are related to lower expressive language scores.
3. What is the contribution of mother’s work schedules (total weekly work hours and primary job shift) at 15 months to the prediction of mother-child proximal processes at 15 months (Figures 6 through 10)? After accounting for family income-to-need and the associated covariates, it is hypothesized that more hours of work per week will predict greater levels of distress and lower levels of positivity and maternal language input. Additionally, it is hypothesized that nonstandard jobs shifts contribute to a less adequate parenting environment. As such, it is expected that nonstandard shifts predict higher levels of maternal psychological distress and lower levels of positive parenting and maternal language input.

4. Do proximal predictors of the parenting environment at 15 months mediate the relationship between maternal work schedules at 15 months and children’s expressive language outcomes at 24 months (Figures 11 and 12)? It is hypothesized that psychological distress will predict lower child expressive language ability. On the other hand, higher levels of maternal positivity and language input in parent-child interactions will predict higher child expressive language ability.

5a. Does perceived racial discrimination moderate the relationship between shift work at 15 months and children’s expressive language skills at 24 months (Figures 13 and 14)? It is expected that higher levels of perceived racial discrimination will intensify the negative relationship between working nonstandard shift and children’s expressive language skills.

5b. Does perceived racial discrimination moderate the relationship between shift work and proximal predictors of the parenting environment at 15 months (Figures 15 through 18)? It is expected that under high levels of perceived discrimination and when
mothers work nonstandard shift schedules, higher levels of psychological distress would be predicted. In addition, it is expected that under high levels of perceived discrimination and nonstandard shift schedules, mothers will show less positive parenting interaction style and talk less to their children.

6. Does marital status at 15 months moderate the relationship between mother’s shift work schedule and children’s expressive language ability at 24 months (Figures 19 and 20)? It is predicted that having a secondary caregiver present will mitigate the negative affect of mother’s nonstandard work schedule on children’s expressive language ability.
CHAPTER FOUR

Methods

Sample and Design

This data comes from the Family Life Project (FLP). The FLP was designed to study families who lived in two of the four major geographical areas of high rural poverty among children (Dill, 1999). Specifically, three counties in Eastern North Carolina and three counties in Central Pennsylvania were selected to be indicative of the Black South and Northern Appalachia, respectively. The FLP adopted a developmental epidemiological design. Complex sampling procedures were used to recruit a representative sample of 1292 families at the time that they gave birth to a child. Given logistical constraints related to obtaining family income data in the context of hospital screening, family income was dichotomized (low vs. not low) solely for purposes of recruitment. Families were designated as low income if they reported household income as less than or equal to 200% of the federal poverty threshold for a given household size, use of social services requiring a similar income requirement (e.g., food stamps, WIC, Medicaid), or if the head(s) of the household had less than a high school education. Eligibility criteria included residency in target counties, English as the primary language spoken in the home, and no intent to move from the area in the next three years.

In NC, families were recruited in person and by phone. In-person recruitment occurred in all three of the hospitals that delivered babies in the target counties. Phone recruitment occurred for families who resided in target counties but delivered in non-
target county hospitals. These families were located through systematic searches of the
birth records located in the county courthouses of nearby counties. At both sites,
recruitment occurred seven days per week over the 12-month recruitment period
spanning September 15, 2003 through September 14, 2004 using a standardized script
and screening protocol.

In total, FLP recruiters identified 5471 (57% NC, 43% PA) women who gave
birth to a child during the recruitment period, 72% of which were eligible for the study.
Eligibility criteria included residency in target counties, English as the primary language
spoken in the home, and no intent to move from the area in the next three years. Of those
eligible, 68% were willing to be considered for the study. Of those willing to be
considered, 58% were invited to participate. Invitations for participation were based on
screening information related to income and, in North Carolina, race. Of those invited to
participate, 82% (N = 1292) of families completed their first home visit, at which point
they were considered enrolled in the study. The sample selected for this examination was
the African American families residing in North Carolina. Because site differences have
been found in previous examinations using FLP, the nine African American families
living in Pennsylvania were excluded from this study. Further, primary caregivers must
have been employed at the 15-month timepoint to be included in the current study. The
total resulting sample is 255 primary caregivers.

Procedure

Most of the data presented here was collected at the 15 month and 24 month time
points. Each home visit lasted approximately 2.5 hours. Secondary caregivers were not
asked to participate in the 15 month visit; however, information concerning the secondary
caregiver’s presence and work conditions was ascertained from the primary caregiver
during the visit. Visits consisted of two research assistants who simultaneously collected
a variety of data from the families, including interviews, questionnaires, primary and
secondary caregiver-child interactions, and child-based tasks. All interviews and
questionnaires were computerized. Interviewers and respondents entered their answers
into a laptop computer, expediting data transfer from collection sites to a centrally located
processing center. At each assessment, new caregivers completed the KFAST literacy
screener (Kaufman & Kaufman, 1994). Parents reading at an 8th grade reading level (or
beyond) were given the opportunity to complete questionnaires on their own, whereas
those who read below an 8th grade reading level had questionnaires read to them.

During one of the two visits conducted at both the 15 and 24 month timepoints,
semi-structured observational measures were video-taped for later coding. The specific
task from which mother sensitivity and engagement were coded was a free play task.
Mothers were asked to play with their child for 10 minutes using an array of Fisher Price
toys. At the 15-month visit, toys included a jack-in-the-box, Little People baby farm
animal set, and a Sort and Soar Rocket. The specific task from which parent language
input was recorded was a picture book task. Parents were asked to sit with their child
where they were comfortable (i.e. floor, couch, arm chair, etc). The books were modified
so that they were wordless. During the picture book activity, parents were told to go
through the book with their child and to let the home visitors know when they were
finished. At 15 months the picturebook was No David (Shannon, 1998). At 24 months
the picturebooks were Just a Thunderstorm and The New Baby (Mayer). The home
visitors were told to end the session after 10 minutes if the parent had not signaled he/she had finished before that point.

**Measures**

**Demographic data.** The demographic data on the families was initially collected at the time of the child’s birth and updated at each home interview if information had changed. At each home interview, detailed information was gathered on household composition, including all people who presently lived in the home, household income that included income from anyone who lived in the household of the family, as well as demographic information on education, jobs, and child care arrangements. From these home interviews at the 15 month timepoint, the following control variables were derived: mother’s education, mother’s age, marital status, current receipt of welfare, child’s age, and hours per week the target child was enrolled in childcare. Mother’s education (or total number of years in school), mother’s age, target child’s age, and hours per week the target child spent in childcare were all continuous variables. A dummy variable was created to represent current receipt of any welfare assistance (1 – receipt of TANF, WIC or food stamps, 0 – no welfare assistance). Finally, variables were created from the demographic data to represent family composition. The reference category was a household comprised of a single mother with no other adult caregiver for the target child. Next households with a biological father present were identified. Some biological fathers were marital partners and others were considered to be cohabiting partners, however both were accounted for in this category. Finally, a category was created for those identified
as adults living in the home and providing care for the target child at least three nights per week. This category most often included the maternal grandmother.

*Income/needs ratio.* The Family Life Project adopted the approach taken by Hanson, McLanahan, and Thomson (1997) of basing household income on anyone who resides in the household, not simply those people related by blood, marriage, or adoption. People were considered to be co-residents if they spend three or more nights per week in the target child’s household. At each visit, the primary caregiver completed a household grid that contained information about each resident. Household income was computed as the sum of (1) the primary respondent’s annual income as reported in the jobs grid, (2) the secondary respondent’s annual income as reported in the jobs grid. If not available, then the person’s annualized contribution to the household was used, (3) the sum of the annualized contributions to the household of all the people in the household grid other than the primary and secondary respondent, and (4) the sum of other sources of income. This includes unemployment insurance, worker’s compensation, social security retirement, other pension, cash income from welfare, SSI, child support, interest/dividend income, rental income, alimony, regular help from relatives, regular help from friends, educational grants you don’t pay back, other income.

Using this information, an annual household total income figure was created and divided by the federal poverty threshold for a family of that particular size and composition (thresholds vary based on number of adults and children) to create the income/needs ratio. For this data, the *income/needs ratio* was calculated using the family income information collected at the 15-month visit using the 2004 poverty threshold values.
**Maternal Work Schedules.** At each home visit the mother completed a jobs grid. The Jobs Grid Questionnaire was developed specifically for the Family Life Project, drawing on questions from the *Current Population Survey Basic Monthly Questionnaire*, the *May 1997 Current Population Survey Supplement Questionnaire*, the *1997 National Study of the Changing Workforce*, as well as investigator developed questions. The questionnaire explores various aspects of participants’ employment situation, including the number of jobs the participant works and the activities involved in their jobs. The update to the jobs grid reviews information about caregiver jobs that was collected in previous visits to determine if any significant changes have occurred. The Jobs Grid Questionnaire Update is a 14-item measure designed to collect information to determine if any significant changes have occurred in caregivers’ jobs, including promotion, demotion, or loss of jobs. The items on the update to the jobs grid relate possible changes in their place of employment, job title and activities, number of hours worked per week, number of weeks worked per year, type of shift worked, and gross income earned. The Jobs Grid was administered via computer using Blaise software.

**Job Hours.** *Total job hours* is the hours per week a parent worked on all jobs held. If the parent was employed at more than one job, these hours were included in total job hours. In this sample, total job hours was highly correlated with hours employed in a principle or primary job. *Job hours squared* was also used to determine if a nonlinear relationship exists between work hours and the outcome variables.

**Job Shift.** *Job shift* is a dichotomous variable in which 1 = nonstandard work shifts (including fixed evening shift, fixed night shift, rotating shift, or irregular) and 0 = fixed day shift (most work hours between 8am and 4pm). Information on
nonstandard work hours was collected for parents’ primary job only. Although some research studies have differentiated among night, evening, and rotating shifts, distinctions in this sample were not possible due to size limitations. Moreover, it has been suggested that among low-income samples, shift distinctions beyond (day vs. non-day) may not fully capture the erratic and inconsistent nature of low-skilled jobs which often consists of a combination of night, evening and rotating schedules (Henly & Lambert, 2005; Joshi & Bogen, 2007).

**Parent-child interaction codes.** Free play interactions were videotaped and coders rated maternal behaviors based on seven subscales which included: parent sensitivity/responsiveness, animation, stimulation of development, positive regard, negative regard, detachment and intrusiveness. Coders rated each of these areas on a 5-point Likert scale (1 = Not at all characteristic, 5 = Highly characteristic). Approximately 30% of the parent codes were double-coded, which means that the final scores were reached by consensus between 2 coders. Each coding pair maintained an inter-rater reliability rating of 0.80 or above.

Factor analyses guided the creation of overall composite for **maternal positive parenting.** *Positive parenting* was created by combining the mean of sensitivity, reverse score of detachment, positive regard for the child, animation, and stimulation of development. The composite for **maternal sensitivity** was created by summing the scale scores for sensitivity/responsiveness, reverse scored intrusiveness, and reverse scored negative regard. This factor was a more affective maternal composite to capture her emotional valence with her child. The remaining items that loaded on the factor representing positive parenting were part of the engagement composite. The composite
for maternal engagement was created by summing the scale scores for reverse coded detachment/disengagement, positive regard, animation, and stimulation of development. This composite was more representative of the mother’s cognitive stimulation and positive engagement with the child.

**Psychological Functioning.** The Brief Symptom Inventory (Derogatis, 2000) was used as a measure of maternal distress. The BSI-18 contains eighteen items that are divided evenly across three dimensions: somatization, depression, and anxiety. A total score, referred to as the Global Severity Index (GSI), was computed by summing scores for the three individual scales. Five additional items were added that form a hostility scale (adopted from the original BSI). This inventory was self-administered via laptop. Internal consistency for Somatization (.74), Depression (.84), Anxiety (.79), and Total or GSI (.89) is based a community sample of 1,134 (male n = 605; age range = (appx). 20 – 69). The BSI-18 has been standardized based on a community sample and has a clinical cut-off T-score of 65 or higher, representing a symptom score above the 90th percentile. Correlations for the subscale and GSI (total) scores from the BSI-18 ranged from .71 to .89 within the current sample.

**Parent Language Input.** The software, Systematic Analysis of Language Transcripts (SALT) (Miller & Chapman, 1985) was used to transcribe all of the DVDs of the picture book activities. The picture book activity commenced when the parent was given the book and the instructions for the task had ended. The activity ended when the parent signaled the coder that the activity was completed. Highly trained research assistants transcribed the language directed to the child during the session. Transcribers were trained by a senior graduate student who spent 1 year learning SALT conventions
and developing a training manual. Transcribers used the training manual to learn the specific conventions of SALT, and transcribed 20 training transcripts that were reviewed by the senior graduate student. As an ongoing check, transcripts were regularly reviewed by a senior transcriber and discussed at weekly research group meetings to ensure consistency in transcription.

From the SALT variables that were created from the transcripts, 2 variables were selected that were cardinal variables in the literature on parental language input. **Number of different word roots** was a measure of the parent’s vocabulary during the task. This was determined on the basis of unique free morphemes. Omitted and unintelligible words were not included. Variations in the words were not counted as separate root words. For instance, *talk* and *talked* would be considered the same root word. **Mean length of utterance in morphemes (MLU)** was a general measure of complexity of language and was calculated by dividing the number the total number of morphemes by the total number of utterances. Parent language input was obtained from the 15-month SALT transcripts.

**Child Expressive Language.** Child language that occurred during the parent-child picturebook task was also transcribed. **Number of different word roots (NDW)** for each child was extracted from the 24 month SALT transcripts. The mean for expressive language as measured during this task was 20.22 (SD=18.10).

**Preschool Language Scale.** The Preschool Language Scale Fourth Edition (PLS-4; Zimmerman, Steiner, & Pond, 2002) was administered by home visitors in the child’s home at 24 months. The PLS-4 is a norm-based measure of children’s language skills, from birth to age 6. The PLS-4 yields 2 subscale measures: auditory comprehension and
expressive communication. Only the *expressive communication* subscale of this test was administered in this project. Test-retest reliability for this age group has been found to be .82 for expressive communication, and internal consistency estimates have been found to be .91 for expressive communication (Zimmerman, et al., 2002). The reliability and validity of a previous version of the PLS (PLS-3) was estimated for use with a low-income African American sample (Qi et al., 2003). The authors found that the PLS-3 expressive language scores of African American and European American children from similar SES backgrounds were not significantly different; however, children in the low-income population consistently scored lower than middle-SES normative sample. Moreover, the validity of the PLS as a measure of language delay in African American children from low-income households was determined to be appropriate when compared to three other commonly used measures of child language. In the current sample the average score was 99.14 (SD = 12.83). However, nearly half (48%) of the children scored below the normative sample mean (M = 100, SD = 15).

*Perceived Racial Discrimination.* The measure of *perceived racial discrimination* was administered at the 24 month home visit. The *Experiences of Racism Scale* is a 13-item measure designed to assess individuals’ experiences of racism (Murry, Brown, Brody, Cutrona, & Simons, 2001). Participants indicated how often they experienced 13 types of racial discrimination (e.g., “How often has someone suspected you of doing something wrong just because you are African American?”). Response options ranged from 1 (*never*) to 4 (*several times*). The coefficient alpha for this scale within the current sample was .90.
CHAPTER FIVE

Results

Data Analysis Plan

This dissertation addresses six research questions. An ordinary least squares regression framework was used to investigate the association of work schedules with two measures of child expressive language, the PLS (standardized) and NDW (spontaneous recording). This analytic methodology allowed testing of both direct and mediated relationships of maternal work schedules with child expressive language ability through maternal psychological distress, positive parenting, and parent language input. Finally, a regression framework was also used to investigate the association of work schedule with maternal (psychological distress and mother-child interaction variables) and child (expressive language) outcomes based on level of perceived racial discrimination and marital status.

The first research question is concerned with the association of income-to-needs ratio at 15 months, beyond the control variables (mother’s age, mother’s years of education, marital status, current receipt of welfare, child’s age, and hours in childcare), with children’s expressive language at 24 months. To assess the additional contributions of more distally related work schedule variables (question 2), job hours and job shift [standard day vs. nonstandard] were added to the model in a hierarchical manner. Next, research question 3 examined the contribution of maternal work schedules to the prediction of maternal proximal process variables (psychological distress, positive
parenting, and language input). The indirect contribution of maternal work schedule to child expressive language ability was examined via the maternal proximal process variables (question 4). In order to assess the indirect associations of work schedules with child expressive language through maternal proximal processes -- psychological distress and parent-child interactions (positive parenting, parent NDW, and parent MLU) -- the procedure outlined in Baron and Kenny (1986) was followed. This test assumes the presence of mediation if (a) work schedule is a significant predictor of child expressive language, (b) work schedule is a significant predictor of the mediator (i.e., one of the proximal process variables -- psychological distress), (c) the mediator is a significant predictor of children’s expressive language, in the presence of work schedule and (d) with the introduction of the mediator, the relationship between work schedule and child expressive language is reduced to zero or significantly attenuated. Once mediation is established the significance of the contribution of maternal shift schedule to children’s expressive language via the mediator is tested using the product of coefficients. This method tests whether the product of coefficients from (1) work schedules to maternal distress and mother-child interactions and (2) from maternal distress and mother-child interactions to child expressive language are different than 0. To the extent that the product of coefficients is significantly different than 0, there is formal evidence of mediation (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Hayes, 2004).

Research questions 5 and 6 examines whether relationships between work schedules and maternal proximal processes (psychological distress and mother-child interaction variables) and child outcomes (expressive language) are amplified in the
context of high levels of perceived racial discrimination or mitigated by the presence of a spouse in the household. All demographic characteristics and work schedule variables are included in the models investigating possible moderating effects; however, in the interest of parsimony, only the significant mediator variables are included in these final models. The addition of a significant interaction term in these models would indicate the presence of moderation (Aiken & West, 1991).

Descriptives

Table 1 presents descriptive information from the larger Family Life Project, the African American sample used in this study, and the non African American working sample within FLP. Overall, the working African American families represented in this study had lower means on key demographic indicators including income-to-needs and education and they were less likely to be married than non African American working families. Table 2 presents the correlations for variables included in the analyses. The dependent variables included a standardized measure of expressive language, the PLS, and a spontaneous measure of children’s expressive language obtained during a book reading task, number of different words (NDW). The correlation between these two measures of expressive language was moderate at .46 ($p<.0001$). The average age of the focal child (when the language measures were taken) was 25.45 months ($SD =1.92$). Children were enrolled in an average of 36 hours ($SD = 5.71$) of child care per week. All primary caregivers were self-identified as being African American ($n=255$). Two hundred fifty-one primary caregivers were the biological mother of the focal child (the remainder were maternal grandmothers). Thus, from this point forward primary
caregivers will be referred to as mothers. Most households (61%) had a secondary
caregiver who was available to tend to the needs of the focal child and lived in the home
at least three nights per week. However, only 33% (n=84) of the mothers were married.

At the 15 month assessment (timepoint for all predictor variables), mothers’
average age was 26.21 (SD =5.56). Most women had earned at least a high school
diploma (M =12.55, SD =1.36). All mothers in this sample were employed; however,
most (83%) obtained some form of public assistance and were recipients of either TANF
or WIC or food stamps. Household income-to-needs ratio of the sample evidenced the
necessity of public support, being on average below 200% poverty (M =1.56, SD=1.19).
Eighty percent of the mothers supported their families through employment in jobs that
were low-skilled, offered little self-direction, and were service oriented. According to
O*Net scores (O*Net; Peterson, et al., 2001, created by the U.S. Department of Labor to
replace the Dictionary of Occupational Titles), typical job categories included customer
service representatives, laborers and stock personnel, food preparers, store clerks, bus
drivers, and cashiers. On average, mothers worked 36.19 (SD = 9.7) hours per week.
Moreover, 39% of the sample (n=100) was employed during nonstandard work hours.

Those who worked nonstandard shifts had lower income-to-need ratio than those
who worked standard day shift (t=2.65, p=.008). Mothers who worked nonstandard shift
were also younger (t=2.63, p = .009) and less educated (t= 3.07, p= 0.002), but on
average still earned at least a high school diploma. Finally, chi-square tests indicated a
significant relationship between working nonstandard shifts and having a secondary
caregiver in the household ($\chi^2$ with 2 degrees of freedom = 7.85, p=0.02).
Results for Research Question 1: Contribution of family income to child expressive language

Research question 1 was concerned with whether family income-to-need at 15 months is linked to children’s expressive language at 24 months, above and beyond maternal and child demographic characteristics (Table 3). Control variables included mother’s age, mother’s years of education, marital status, current receipt of welfare, child’s age, and hours per week in childcare. The model containing only the control variables accounted for 4% of variability in children’s PLS scores [F (6, 216) = 2.56, p = .02]. Next, the predictor variable, income-to-needs ratio was added to the model (Figure 2). No further variance in children’s PLS score was explained with the addition of family income-to-needs (\(\Delta R^2 \text{F} (1, 216) = .06, p = .81\)).

For the dependent variable number of different words (spontaneous measure, Figure 3), the model containing the control variables predicted 6% of the variance [F(6, 217) = 3.46, p = .003]. Like the previous model, no further variance in children’s NDW was explained with the addition of family income-to-needs (\(\Delta R^2 \text{F} (1, 210) = .47, p = .49\), see Table 3).

Results for Research Question 2: Contribution of maternal work schedule to child expressive language

Research question 2 was concerned with whether maternal work schedule variables at 15 months (including total work hours, work hours squared, and shift schedule) is linked to children’s expressive language ability at 24 months (see Figure 4 and Figure 5). Total work hours, total work hours squared, and shift schedule (day vs.
non-day) were added to the models that contained demographic information and family income (from research question 1). For the PLS, no significant variability was added to the model when maternal work schedule variables were added ($\Delta R^2 F(3,212) = 2.03, p = .11$). Neither total work hours nor employment during non-day shifts at the 15 month timepoint was associated with children’s language ability on the PLS at 24 months (Table 3).

For children’s NDW, adding work schedule variables to the model predicted an additional 4% of variability ($\Delta R^2 F(3,207) = 3.72, p = .01$). Mothers who worked nonstandard shift schedules ($M = 16.22, SD = 16.63, n = 83$) at 15 months had children who expressed approximately six fewer different words than mothers who worked standard day shifts at 24 months ($M = 22.7, SD = 18.63, n = 135$). The full model accounted for 10% of the variance in children’s NDW (Table 3).

**Results for Research Questions 3: Contribution of maternal work schedules to proximal processes**

Research question 3 was concerned with whether maternal work schedule variables are concurrently linked to mother-child proximal processes at 15 months. The process variables considered in the current analysis included maternal positive parenting (Figure 6), psychological distress (Figure 7 and 8), and maternal language input -- mNDW and mMLU (Figure 9 and 10, respectively).

Each model controlled for maternal age, education, marital status, receipt of welfare, and number of children in the household at 15 months. Predictor variables included family income-to-needs ratio, maternal work hours, and shift schedule at 15
months. Regression analysis (Figure 6, Table 4) indicated that for **positive parenting**, income-to-needs was a significant positive predictor ($\beta = .19, p = .02$). Although neither of the maternal work schedule variables was linked to mother’s positivity in the parenting environment on its own, as a group maternal work schedule added 2% of variance to the model [$F(3, 226) = 2.88, p = .04$]. Overall, the demographic controls, family income, and maternal work schedule variables accounted for 11% of the variance in positive parenting.

A separate model was estimated to determine if maternal work schedule was a significant predictor of psychological distress (Figure 7, Table 4). Regression analysis indicated that above and beyond the control variables, family income-to-need was not a significant predictor maternal **psychological distress** at 15 months [$\beta = -0.01, p = 0.92$, $F(6, 246) = 2.79, p = 0.012$, $R^2 = 0.04$]. Maternal work schedules were then added to the model and explained an additional 9% of variance in psychological distress [$F(3, 243) = 9.66, p = .0001$]. No mean differences on psychological distress were found when mothers worked nonstandard shifts as opposed to regular daytime shifts. However, mothers seemed to suffer more psychological distress as weekly work hours increased past 40 hours (Figure 8). Overall, the demographic controls, family income, and maternal work schedule variables accounted for 13% of the variance in maternal psychological distress.

Next, a model was estimated to determine if maternal work schedule was a significant predictor of mother’s **number of different words** (Figure 9, Table 4). Above and beyond the control variables, family income-to-need was not a significant predictor of the number of words mothers spoke to their children ($\beta = 0.03, p = 0.68$, $F(1, 241) =$
Moreover, work hours were not a significant predictor of the number of different words mothers spoke to their children; however at 15 months mothers who worked a nonstandard shift spoke ten fewer different words to their children during the book interaction. Overall, the demographic controls, family income, and maternal work schedule variables accounted for 5% of the variance in mother’s talk to her children.

Finally, a model was estimated to determine if maternal work schedule was a significantly linked to mother’s mean length of utterance (MLU). Neither the maternal demographic control variables, nor family income, nor maternal work schedule variables proved to contribute to mother’s MLU (Figure 10, Table 4), [F (9, 238) = 1.45, p =0.17].

Results for Research Question 4: Mediated effects of maternal work schedules on child expressive language

Research question 4 was concerned with the mediation of work schedule factors at 15 months on each measure (PLS and NDW) of child expressive language at 24 months. The mediators considered in the analyses included the proximal process variables of maternal psychological distress, positive parenting, and maternal language input.

First, each mediator was considered in a model on its own, then all mediators were entered as a block into the regression analysis. For the PLS (Figure 11), maternal psychological distress was not a significant predictor of expressive language on its own (β=-0.06, p = 0.43). A separate model was estimated to determine if positive parenting was a significant predictor of children’s PLS scores. Positive parenting, characterized by sensitive and engaging parent-child interactions, at 15 months positively predicted
children’s PLS scores at 24 months (β=0.16, p=0.02). Because the work schedule variables were unrelated both child expressive language as measured by the PLS and to positive parenting, no testing of mediation was possible. This model (with control variables, income-to-needs, work schedule factors, and positive parenting) accounted for 7% of the variance in child PLS scores [F(11, 195) = 2.41, p =.01]. Another model was estimated to determine if mother’s language input at 15 months was a significant predictor of children’s expressive language at 24 months. Neither NDW (β=0.04, p=0.53) nor MLU (β=-0.04, p=0.59) spoken by mothers was a significant predictor of children’s PLS score. When a full model was estimated (including all controls, work variables, and mediators, Table 3), 6% of the variance in the PLS had been accounted for [F (14, 191) = 1.96, p=.02]; however, positive parenting was the only significant predictor in the model (β=0.18, p =.03).

Models were also estimated to determine if psychological distress, positive parenting, and maternal language input were mediators of the relationship between maternal work schedules and children’s number of different words (NDW, Figure 12). Maternal psychological distress at 15 months was not a significant predictor of children’s expressive vocabulary as measured by NDW at 24 months (β=-0.06, p=.39). As a result, although nonstandard shift schedules (β=-0.16, p = .02) continued to be a significant negative predictor of children’s expressive language as measured by NDW, a test of mediation by psychological distress was not possible. This model (including controls, income-to-needs, work schedule factors, and psychological distress) accounted for 10% of the total variance in children’s NDW [F(11, 206) = 3.08, p = .0008].
A separate model was estimated to determine if positive parenting was a significant predictor of children’s NDW (question 4, Figure 12). Sensitive and engaged parenting at 15 months proved to be a significant positive predictor of child NDW ($\beta=0.19$, $p=0.007$). Because work schedule variables were unrelated to positive parenting, no testing of mediation was possible. Moreover, when positive parenting was added to the model, the relation between shift schedule and the NDW showed no significant change. After accounting for demographic information, family income, and work schedules, positive parenting explained another 3% of variance to the model predicting NDW ($\Delta R^2 F(1, 192) = 7.46$, $p = .007$). This model accounted for 15% of the total variance in children’s NDW [$F(11, 192) = 4.14$, $p = .0001$).

A final model was estimated to determine if mother’s language input at 15 months was a significant predictor of children’s NDW at 24 months (Figure 12). Mothers who spoke more different words at 15 months had children with greater expressive language ability at 24 months ($\beta = 0.16$, $p = .03$). On the other hand mothers who used more complex language (MLU) at 15 months had children who spoke fewer different words at 24 months ($\beta = -0.14$, $p = .05$). When the maternal language variables were added to the model, the relation between shift schedule and the NDW showed no significant change, indicating that mediation did not occur. Moreover, the addition of maternal language input did not contribute a significant amount of variance to the overall model ($\Delta R^2 F(2, 201) = 2.89$, $p = .06$). This model accounted for 12% total variance in children’s NDW [$F(12, 201) = 3.52$, $p = .0001$].

When a full model was estimated (including all controls, work variables, and all mediators), 15% of the variance in children’s NDW was accounted for [$F(14, 184) = 3.50$, $p = .0001$].
Shift schedule was a negative predictor of children’s expressive language. As stated previously, mothers who worked nonstandard shift schedules at 15 months had children with an average of six fewer different words at 24 months than mothers who worked standard day schedules (β=.18, p = .01). Although positive parenting was a significant predictor of children’s NDW (β=.17, p = .03), none of the remaining individual mediators acted as a mechanism through which the relationship between mother’s work schedule at 15 months and children’s language ability at 24 months could be explained. The block of mediators contributed 3% of variance to the overall model [ΔR² F(4, 184) = 7.46, p = .01], primarily due to the effect of positive parenting.

Results for Research Questions 5a and 5b – Moderation: Perceived Racial Discrimination

To examine the role of racism, first a main effect for perceived racial discrimination was added to each of the full models predicting children’s expressive language scores (PLS and NDW, see Figures 13 and 14). Next an interaction term was added to explore whether the negative relationship between nonstandard schedules and children’s expressive language is exacerbated under the stressful conditions of mother’s perceptions of racial discrimination. The analyses showed that nonstandard schedule was not moderated by mothers’ perception of racial discrimination for either the standardized expressive language score (PLS) or the spontaneous measure of expressive language (NDW, Table 5).
To test whether perceived racial discrimination was associated with parent-level data, models predicting maternal psychological distress and parent-child interaction style were estimated (question 5b, Figures 15 through 18). Again, the main effect for mother’s perceptions of racial discrimination was added to each model. Then an interaction term was added to each model predicting one of the mother-child proximal process variables. The first model tested whether mothers’ experiences of racial discrimination contributed to their levels of distress at 15 months above and beyond demographic controls and maternal work schedule variables. After the addition of the main effect of perceived racial discrimination, it was found that mothers who experienced higher levels of racial discrimination displayed higher levels of distress ($\beta=0.16$, $p=.04$). No significant interaction effect of perceived racism and shift schedule was found (Table 6). The overall model accounted for 17% of variance in maternal psychological distress [$F(10, 219) = 5.69$, $p=.0001$].

The next set of models estimated the potential contribution of perceived racial discrimination to the prediction of maternal positivity and language input at 15 months. Mother’s perceived racial discrimination was not a significant predictor of expression of positivity during interactions with their children ($\beta=0.03$, $p=0.68$). Moreover, no significant interaction effect of shift schedule and perceived discrimination was found ($\beta=-0.13$, $p=.53$). The overall model, including demographic and work schedule variables, accounted for 10% of the variance in the positivity mothers displayed when interaction with their children at 15 months [$F(11, 202) = 3.05$, $p<0.0009$, Table 6].

Perceived racial discrimination was not a significant predictor of mNDW ($\beta=.10$, $p=.24$). Moreover, no significant interaction effect of shift schedule and perceived
discrimination was found ($\beta=-0.12$, $p=.54$) for mother’s number of different words. The overall model, including demographic and work schedule variables, accounted for only 5% of the variance in the number of different words mothers spoke to their children ($F(11, 213) = 2.11$, $p=.02$, Table 6). Finally, mother’s perceived racial discrimination was a significant predictor of mother’s MLU ($\beta=.26$, $p=.002$). However, no significant interaction effect of shift schedule and perceived discrimination was found ($\beta=-0.27$, $p=.17$) in the model predicting mother’s complexity of speech (MLU). The overall model, including demographic and work schedule variables, accounted for only 5% of the variance in mother’s MLU ($F(11,213) = 2.18$, $p=.02$, Table 6).

Results for Research Question 6 – Moderation: Marital Status

As shown in the previous models, children’s number of different words was the only child outcome variable with which maternal shift schedule was significantly associated. To test whether the negative relationship between children’s NDW and mother’s nonstandard work schedules was mitigated by the presence of a marital partner in the household, an interaction term was added to the full model (including all controls, income-to-needs ratio, and mediators): shift schedule by marital status (Figures 19 and 20). Using a hierarchical regression framework it was found that the presence of a spouse at 15 months did not mitigate the negative effect of mother’s nonstandard shift schedule at 15 months on children’s NDW at 24 months (Table 5).
CHAPTER SIX

Discussion

The current study examined distal contexts and proximal processes that contribute to African American children’s early language development. Using a sample of African American families living in rural North Carolina, this study drew upon data regarding two large social factors, the parental work environment and experiences with racism, which may influence everyday family life. The results of this study suggest that African American mothers’ experiences of work and living as a minority in an unequal society seem to contribute to the family context in complex ways. Although previous research suggests that women who work early in their child’s life and during certain hours may have selective characteristics (thus biasing the sample), this study attempted to control for a wide array of demographic indicators that have been shown to be associated with mother’s work schedules (Han, 2005). Some evidence emerged to indicate that mothers who worked nonstandard schedules at 15 months had children with lower expressive language ability by 24 months; however these findings were not consistent across outcome measures. Overall, the results of this study suggest an additive effect of distal contexts and proximal factors on children’s expressive language development. In addition, evidence indicated that mothers’ experiences of discrimination were associated with her own psychological distress at 15 months, yet these findings were not fully extended to experiences within the family context or to language development for young children.
This study uniquely contributes to literature in its specific focus on African American families and maternal shift schedules. The literature on work schedules within the 24 hour American economy is burgeoning; however there are no studies to date that focus on African American families. Although African Americans are disproportionately represented among low-wage nonstandard shift workers (McLoyd & Enchautegui-de-Jesus, 2005; Presser, 2003), most studies that do exist have drawn samples from large national data sets or specific populations of workers (i.e., nurses, bus drivers, etc.) that are not necessarily representative of low-wage employees (i.e., NICHD SECC sample used by Han, 2005; Barnett & Gareis, 2007; Grosswald, 2004). Not until recently have researchers begun to broach the topic of shift work among low-wage workers (Heymann, 2000; Phillips, 2002; Yoshikawa, Weisner, & Lowe, 2006). Studies such as the New Hope Project have begun to shed light on low-wage employment factors and their impact on family life and child development among minority families in the inner city (Yoshikawa et al., 2006). Because the minority experience in the study of shift work has often been overlooked, this dissertation sought to draw upon the work experiences of an African American sample of mothers with young children. Studies across major fields of inquiry typically include African Americans as subjects within their sample however race is used as a control variable. Controlling for race along with other demographic confounds (i.e. income, education, family structure, etc.) may be considered problematic. The use of race as a control variable suggests that it may be related to the outcome of interests but designates race as having lower conceptual or theoretical import (Steinberg & Fletcher, 1998). This dissertation sought to highlight the real life experiences of a sample of African Americans that were part of a larger study on families living in areas
of high rural poverty. Thus, this dissertation examined work factors and experiences of discrimination as stressors that are linked to the family context, within a subsample that included only individuals who self-identified as having an African American ethnic background. In the discussion that follows a more nuanced picture regarding the contribution of these maternal experiences for child outcomes will be laid out, highlighting the limitations of the study and areas for future research.

**Research Question 1: Contribution of family income to child expressive language**

Results from this study suggest that family income at 15 months was not related to child language ability at 24 months. Although other studies have implicated income as a contributing factor to the prediction of social-emotional and achievement outcomes for children (Conger et al., 2002; Fish & Pinkerman, 2003; McLoyd, 1998; Nievar & Luster, 2006; Raviv, et al, 2004), this study did not find any direct or indirect relationships between income-to-needs ratio and children’s early expressive language outcomes. Examination of the data indicated that income-to-needs for the families within this sample was skewed towards below 200% poverty. This may suggest that other measures of household economic (in)stability should be accounted for in future examinations, particularly when using this sub-sample of African American families. Perceptions of economic hardship and fluctuations in family income-to-needs have both proven to be factors of great importance in previous studies of young children from poor families (Conger et al., 2002; Dearing, McCartney, & Taylor, 2001). Moreover, this finding (or lack thereof) underscores the importance of identifying poverty in its various forms and the pervasiveness of its effects on children and families. Given the concentration of
poverty within this sample, it may be necessary to identify other forms of economic resources that may impact family survival. For example, more than 80% of the current sample received some form of public assistance at the 15 month timepoint. Although the receipt of welfare in itself may not impact developmental outcomes for children, the unmeasured constraints associated with poverty, such as income instability, may warrant further analysis in future investigations (Levine & Zimmerman, 2005).

Research Questions 2 and 3: Contribution of maternal work schedules to child expressive language and mother-child proximal processes

Results from this study showed inconsistent associations between maternal work schedules at 15 months and children’s expressive language ability at 24 months. Neither work hours nor work shift were linked to children’s standardized expressive language (PLS) scores. However, nonstandard shift work was associated with a decrease in children’s spontaneous expression of words (NDW). Hseuh and Yoshikawa (2007) found that concurrent nonstandard schedules were not related to teacher-report of school achievement, yet long-term nonstandard schedules were associated with decreases in parent-report of school achievement. Mainstream, school-based measures of language development may not sufficiently tap into the ways of communicating most valued by ethnically or socio-economically diverse populations (Hammer & Weiss, 1999; Heath, 1983; Vernon-Feagans, 1996). The spontaneous measures of language used in this study were acquired during a wordless picturebook session, which may be more sensitive to the ways of relating most common in African American culture. Moreover, the fatigue and stress of nonstandard schedules experienced by mothers may have manifested during the
close physical proximity and attention required in this interaction. In fact, mothers who worked nonstandard shifts spoke fewer different words to their children during the picturebook task. How workers cope with the stressors of a nonstandard schedules has been implicated in shaping how families and children experience the effects work. Although there are measured costs to working nonstandard schedules, some individuals choose to work these shifts, allowing them to spend time with young children while supplying income to their families without governmental assistance (Hseuh & Yoshikawa, 2007). Thus, working nonstandard shifts may not evidence a consistent negative association with all measures of child or family well-being. Future research should investigate the differences in association of employment factors on family functioning among workers who choose to work nonstandard shifts and those who work nonstandard shifts out of necessity.

Results from this dissertation failed to find an association of shift schedule with either maternal distress or parenting style. Fenwick & Tausig (2001) found that with sense of control in the model, nonstandard work schedule did not predict distress. Likewise, Hsueh and Yoshikawa (2007) did not find effects of nonstandard schedules on parental psychological well-being. On the other hand, most previous studies have shown a consistent negative contribution of nonstandard work schedules to the home parenting environment (Han, 2005; Heymann & Earle, 2001). It has been suggested that workers’ perception of job fit may moderate the relationship between shift schedule and mental health. If a mother chooses to work non-day shifts so that she is able to provide care for a young child during waking hours, the negative effect of nonstandard shifts on mental health and parent-child interactions is probably minimized.
Research Questions 4: Mediated effects of maternal work schedules on child expressive language

Results from this dissertation suggest that the contribution of nonstandard schedules at 15 months to children’s expressive language at 24 months was not mediated individually or as a group by the variables proposed. Again, nonstandard schedule effects were only found for children’s number of different words. However, for both measures of expressive language (NDW and PLS), positive parenting was a significant individual predictor. Mothers who were more engaged and sensitive in their parenting style had children with more advanced expressive language skills. This finding is consistent with other studies of children’s language outcomes, suggesting that the quality of the home environment is an important factor in examinations of the effects of socioeconomic risk (Han, 2005; Nievar & Luster, 2006; Raviv et al., 2004). Even though mediation did not occur, in terms of development at the 24 months, children may be reaching a critical window in cognitive development wherein the skills of a supportive coach is needed for gains in language breadth and complexity (Pan et al., 2005). As a result, a responsive and sensitive parenting environment may become more critical across time for children’s language development.

The remaining hypothesized measures of maternal parenting environment, including psychological distress, mother’s MLU, and mother’s NDW did not provide any additional explanatory power to the models predicting children’s expressive language ability. Similarly, Han (2005) did not find maternal depression to mediate the effects of nonstandard work schedules on children’s cognitive development. Other aspects of maternal psychological well-being (parental stress or time pressure) have also yielded
little evidence of mediation of nonstandard schedules on school performance (Hsueh & Yoshikawa, 2007). However, Joshi and Bogen (2007) have found that parenting stress mediates the association between nonstandard work schedules and children’s behavior problems. Although previous models have firmly established that poverty takes a psychological toll on the well-being of parents (McLoyd, 1990), more studies are required to reconcile the role that maternal mental health plays in the impact of nonstandard work schedules on child outcomes.

Finally, although previous studies have implicated maternal language in the link between SES and child language outcomes (Hart & Risley, 1995; Hoff, 2003; Pan et al., 2005), this study did not find maternal language to be a mediator of the effect of nonstandard shifts on child language outcomes. Interestingly, one recent study has indicated that the when mothers are engaged in stimulating language interactions with their children, an engaged parenting style may mediate the effect of SES on the quality of maternal talk to children (Vernon-Feagans et al., 2006); providing evidence to previous speculation of maternal sensitivity as a proxy for maternal language input (Raviv et al., 2004). In this dissertation, positive parenting was moderately correlated with mother’s word production and language complexity (.47 and .23, respectively). The use of maternal language input and positive parenting style may have been conceptually redundant. Finally, it may also be important to account for the language environment provided by other caregivers in the child’s household. One recent investigation found that father’s language input made a significant contribution to children's expressive language scores, while mother’s language input did not (Pancsofar & Vernon-Feagans, 2006). Thus, fathers and other caregivers who share the majority of childrearing
responsibilities may contribute uniquely to children’s language environment. Future examinations of children’s language development should account for other caregivers’ contributions of language input.

Last, it is possible that distal work factors may be mediated by other unmeasured characteristics such as quality of the home learning environment or quality of child care. Future studies may also consider moderator variables such as parenting satisfaction. Some women ascribe less meaning to formal employment than others. Employment may serve as a support for family income and not serve as a major factor in some women’s self-identities. As a result, characteristics of employment, such as shift scheduling, may have less of an impact in determining the satisfaction derived from parenting and the care women provide for their children. Thus, parenting satisfaction may serve as a buffer of the effects of employment conditions on children’s outcomes.

**Research Questions 5: Moderated effects of racism on child and mother outcomes**

The effect of racial discrimination at 24 months was proposed to moderate the impact of nonstandard work schedules on child and maternal outcomes measured at 15 months. Results from this dissertation suggest that effects of maternal perceptions of racial discrimination are more readily evident for outcomes at the parent level than at the level of child. Although there was no evidence to support the notion that the effect of nonstandard work schedule in the prediction of mother distress, interaction style, or child expressive language ability was moderated by mother’s level of perceived discrimination, some main effects were present. Perception of racial discrimination was a significant predictor of mother’s talk (mMLU) and level of distress. Mothers who experienced high
levels of racial discrimination had higher levels of psychological distress and spoke longer utterances to their children.

Notably, previous research has evidenced the effect of parents’ experiences with racial discrimination on family relationships and child well-being for adolescents and preschoolers (Crouter et al., 2006; Murry et al., 2001; Obrien-Caughy et al., 2004). The current study adds to this knowledge base by suggesting a progression of the effects of race-based stressors on family life. Because mothers’ perception of racial discrimination was a significant predictor for only two parent level variables (mother’s MLU and psychological distress), this may suggest that African American parents wish to shield their very young children from the stresses they experience due to racial discrimination. However, the results of this dissertation suggest possible spillover of the effect of racism through mother’s longer utterance length. While still controversial, research has shown that parents support children’s early language development by modifying their speech to less complex forms (Furrow, Nelson, & Benedict, 1979; Hoff, 2006). Thus, parents who suffer the stress of high levels of perceived racial discrimination may in turn become less sensitive and responsive to the cues of their child during interactions. As children transition to school, parents may become more overt in their discussions of race, ethnicity, and racial discrimination (Hughes & Chen, 1997). Whether addressing race is a conscious effort or not among African American parents, this study suggests that even when children are as young as 24 months, the effects of parents’ experiences with discrimination may begin to be evidenced in the home environment.

In this study, racial discrimination, although measured at the 24 month timepoint, is thought to be a stable and omnipresent characteristic. Moreover, the measure used to
assess perceptions of discrimination did not indicate a point-in-time reference from which to draw individual recollections. Respondents were simply asked to rate on a scale of 1 “Never” to 4 “Several times” how often a particular racist event (i.e., called a derogatory name, ignored or excluded you from an activity, hassled by police) occurred. Future studies may gain a more accurate account of the moderated relationship between shift schedules and racial discrimination if a measure of work-based experiences of racial discrimination is used.

Research Question 6: Moderated effects of marital status

The effect of nonstandard schedules on children’s expressive language was not mitigated by the presence of a spouse in the household. This suggests that a similar relationship exists between maternal shift schedules and children’s expressive language ability across family household composition. It may be that households represented in this sample are stressed to a point wherein the potential benefits of having a secondary caregiver are dampened. The mean income-to-needs ratio of this sample of working mothers was approximately 150% of the federal poverty thresholds. These dire economic constraints may indicate high rates of unemployment among secondary caregivers (Joshi & Bogen, 2007). Since these families included very young children, mothers may have tried to make up for the lack of earnings in the household by quickly finding a job. In this sample a large share of mothers (nearly 30%) worked full-time, nonstandard schedules, indicating the probable necessity of employment (regardless of scheduling factors) for these mothers.
In this dissertation, marital status was used as a proxy for the amount of support mothers experienced within these families. It should be noted in a separate analysis that differences based on family configuration (no secondary caregiver present, father present, or other caregiver present) was assessed, however no significant findings were evidenced. Neither marital status nor family configuration may index family level processes that may be key in predicting young children’s developmental outcomes. Rather than demographic markers, future studies might also examine relationship quality as a particularly salient feature in predicting child outcomes. Particularly, in African American families the examination of relationship quality should be extended to dyads outside of the mother-father relationship to individuals that are primarily involved in the caretaking of the child. For example, maternal grandmothers may be important contributors to children’s language environments as secondary caregivers in many African American families.

Limitations and Conclusions

This study uniquely addresses children’s language development within a low-income African American sample living in a rural setting. This study identified two large social factors, the parental work environment and experiences with racism, as playing pivotal roles in the home environment and children’s language development. Most importantly, it was found that a potential long term negative consequence of mothers’ employment in jobs that require nonstandard schedules is lower expressive language ability for children at 24 months of age. In this study, several factors that might account
for the association between mother’s work schedules and children’s language
development were also explored; however, no mediating processes were identified.

Several limitations of this dissertation should be noted. First, the sample used in
this study was limited to only African American mothers who were working at the 15
month timepoint. Selection bias in estimating the effects of nonstandard work schedules
is a concern, given that low-income, less educated, and unmarried women are more likely
than their counterparts to work nonstandard hours (Presser & Cox, 1997). Secondly, the
findings of the study did not reveal a consistent association between family income-to-
needs ratio and child expressive language outcomes or parental proximal factors. It is
suspected that an association would have been evidenced if a wider range in family
income was represented in the sample. Third, although child care hours was controlled
for in this study, the type of care families used and the quality of care was not considered
in its association with parents shift schedules and child language outcomes. The
literature suggests that children of mothers working nonstandard shifts tend to be cared
for by fathers or other caretakers, rather than center based care (Han, 2004). Center
based care has been linked to better language and literacy outcomes (NICHD ECCRN,
2004), thus children of mothers working nonstandard hours may disadvantaged in terms
of school readiness. Finally, although this study considered maternal perceptions of
racial discrimination, this measure may have been too broadly based. Future studies
might limit experiences of discrimination to those in the workplace. Moreover, children
in this sample were very young, associations between family members’ experiences of
racism and child outcomes might be evidenced more readily once children have reached
grade school.
Since the children in this sample are quite young and have family socioeconomic characteristics that are disproportionately representative of risk factors for later reading and academic delays, the differences observed due to mother’s work shift is quite worrisome. Even when mediating and moderating factors that might mitigate the effects of nonstandard schedules as a negative consequence for children’s expressive language ability were taken into account, negative effects persisted. Concern is warranted given the potential for this language gap to increase exponentially as children get older and family constraints are tightened, particularly if a mother is employed in nonstandard shifts over the long term. In addition, more powerful effects for children’s expressive language skills may be found for older children. At 24 months, children’s expressive language skills may be limited and may be more accurately accounted for at a later timepoint (i.e., 36 months). Finally, future studies should identify the effects of parental nonstandard shifts on a wider range of child outcomes including measures of internalizing or externalizing behavior, school readiness, and health related outcomes.

The role of perceived racial discrimination in child and parent level outcomes was also explored in this study. This dissertation is one of only a few studies that has tried to directly address the role that racism plays in family relationships and child development of African Americans. Like nonstandard shift, a high level of perceived racial discrimination was viewed as a contextual stressor. Although no interacting effects of nonstandard shift scheduling and perceptions of racial discrimination were found, mothers’ experiences of racial discrimination negatively impacted their psychological well-being and the amount of talk to their children. The effects of discrimination did not extend to children’s outcomes; however, previous literature suggests that as children get
older, the stressful affects of parents’ experiences of racism cascades from the individual, to family relationships, and eventually to children’s well-being.

It is suspected that the effects of racial discrimination may also be manifested in less overt ways. In this sample of rural families, systematic racial barriers may be evidenced by lower levels of education, high proportion of employment in jobs with nonstandard shifts, and depth of poverty among African Americans. Moreover, because these families live in rural America they may represent some of the most fragile families, susceptible to the volatility of the economy. As the rural landscape has changed from an agrarian economy towards low-skill, service based jobs, African American families have been disproportionately affected by the low wages that these jobs offer. The concentration of low-wage, lower skilled jobs among this population illuminates how class-based and racial discrimination marginalizes groups in a way that may not be direct or vocal, but in an insidious manner.

These findings suggest a need for continued exploration and highlights relevant considerations for future research. Measures of work schedule in this study were point in time estimates. Future studies might show stronger associations between maternal nonstandard work schedules and child language outcomes if fluctuations of employment are taken into account. An account of employment changes at frequent intervals may present a more realistic picture of the volatility of employment and work schedules for low-income families. Secondly, it is possible that the effects of nonstandard schedules would be stronger if mothers work night or rotating shifts. The sample size in this study precluded an analysis at that level. Further research is warranted in this area. Moreover, there continues to be the omnipresence of racial inequity as a contributing factor to the
economic success of African American families. Thus, special attention should be paid to African American families and difficulties in balancing work during nonstandard hours.
Table 1
Means, Standard Deviations, Maximum and Minimum for all variables: FLP, Employed African American Mothers, and Employed Non-African American Mothers.

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Means, Standard Deviations, Maximum and Minimum for all variables: FLP, Employed African American Mothers, and Employed Non-African American Mothers

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s.d. 12.83 18.10 1.09 5.56 1.36 0.47 1.92 15.5 0.70 0.37 9.71 0.50 0.76 11.61 35.66 0.88 7.27

1. PLS – Standardize Expressive Language score
2. NDW- Spontaneous measure of expressive language
3. Income-to-needs ratio
4. Mother’s age
5. Mother’s education
6. Marital status
7. Child’s age
8. Childcare hours per week
9. Number of children under 5 in household
10. Current receipt of TANF, WIC or Foodstamps (0=No, 1=Yes)
11. Total weekly work hours
12. Work Shift (0=Standard Day, 1=Nonstandard)
13. Positive Parenting
14. BSI- measure of distress
15. Mother’s number of different words
16. Mother’s mean length of utterance
17. Perceived Racial Discrimination
Table 3 Hierarchical regression analyses predicting children’s expressive language

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Notes: + p < .10, * p < .05, ** p < .01, *** p < .001, ****p<0.0001
Table 4 *Hierarchical regression analyses predicting parenting proximal processes*

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Notes: + p < .10, * p < .05, ** p < .01, *** p < .001, ****p<0.0001
Table 4 (cont’d) Hierarchical regression analyses predicting parenting proximal factors

<table>
<thead>
<tr>
<th></th>
<th>Mother NDW</th>
<th></th>
<th></th>
<th>Mother MLU</th>
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<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 3</td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 3</td>
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<tr>
<td>Demographic Controls</td>
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<tr>
<td>Maternal Age</td>
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<td>0.01</td>
<td>0.00</td>
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<td>-0.03</td>
<td>-0.04</td>
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<tr>
<td>Maternal Education</td>
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<td>0.15</td>
<td>0.13+</td>
<td>-0.06</td>
<td>0.01</td>
<td>-0.00</td>
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<tr>
<td>Marital Status</td>
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<td>0.04</td>
<td>0.04</td>
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<td>-0.01</td>
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<td>Receipt of Welfare</td>
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<td>-0.08</td>
<td>-0.07</td>
<td>-0.08</td>
<td>-0.04</td>
<td>-0.03</td>
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<tr>
<td>No. children under 5</td>
<td>0.11+</td>
<td>0.11+</td>
<td>0.13*</td>
<td>0.09</td>
<td>0.09</td>
<td>0.11</td>
</tr>
<tr>
<td>Income</td>
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<tr>
<td>Income-to-Needs Ratio</td>
<td>---</td>
<td>0.03</td>
<td>0.05</td>
<td>---</td>
<td>0.16</td>
<td>0.20**</td>
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<td>Work Schedule</td>
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<tr>
<td>Hours/week</td>
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<td>---</td>
<td>0.09</td>
<td>---</td>
<td>---</td>
<td>0.18</td>
</tr>
<tr>
<td>Hours/week²</td>
<td>---</td>
<td>---</td>
<td>-0.13</td>
<td>---</td>
<td>---</td>
<td>-0.27</td>
</tr>
<tr>
<td>Nonstandard shift</td>
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<td>---</td>
<td>-0.14*</td>
<td>---</td>
<td>---</td>
<td>-0.05</td>
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<tr>
<td>Model F</td>
<td>3.52**</td>
<td>2.95**</td>
<td>2.54**</td>
<td>1.11</td>
<td>1.67</td>
<td>1.45</td>
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<tr>
<td>(ndf, ddf)</td>
<td>(5, 242)</td>
<td>(6, 241)</td>
<td>(9, 238)</td>
<td>(5, 242)</td>
<td>(6, 241)</td>
<td>(9, 238)</td>
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<td>Adjusted R²</td>
<td>0.05</td>
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<td>0.05</td>
<td>0.00</td>
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<tr>
<td>Change F</td>
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<td>(ndf, ddf)</td>
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<td>(1.241)</td>
<td>(3.238)</td>
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<td>(1, 246)</td>
<td>(3.238)</td>
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<tr>
<td>ΔR²</td>
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<td>0.00</td>
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</tr>
</tbody>
</table>

Notes: + p < .10, * p < .05, ** p < .01, *** p < .001, **** p < .0001
Table 5. *Regression models predicting children’s expressive language including interactions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>PLS</th>
<th>Child NDW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>β</td>
</tr>
<tr>
<td>Perceived Racial Discrimination X Nonstandard Schedule Model</td>
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</tr>
<tr>
<td>Nonstandard Schedule</td>
<td>-0.09</td>
<td>-0.30</td>
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<tr>
<td>Perceived Racial Discrimination</td>
<td>0.02</td>
<td>-0.03</td>
</tr>
<tr>
<td>Nonstandard Schedule x PRD</td>
<td>-0.02</td>
<td>0.13</td>
</tr>
<tr>
<td>Model F</td>
<td>1.67</td>
<td>3.06******</td>
</tr>
<tr>
<td>(ndf, ddf)</td>
<td>(16, 186)</td>
<td>(16, 182)</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.05</td>
<td>0.14</td>
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<tr>
<td>Change F</td>
<td>0.01</td>
<td>0.41</td>
</tr>
<tr>
<td>(ndf, ddf)</td>
<td>(1, 186)</td>
<td>(1, 182)</td>
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<tr>
<td>Marital Status X Nonstandard Schedule Model</td>
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<td></td>
</tr>
<tr>
<td>Nonstandard Schedule</td>
<td>-0.15</td>
<td>-0.16*</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-0.11</td>
<td>-0.05</td>
</tr>
<tr>
<td>Marital Status x Nonstandard Schedule</td>
<td>0.08</td>
<td>-0.03</td>
</tr>
<tr>
<td>Model F</td>
<td>1.89*</td>
<td>3.36******</td>
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<td>(ndf, ddf)</td>
<td>(15, 190)</td>
<td>(15, 187)</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.06</td>
<td>0.15</td>
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<tr>
<td>Change F</td>
<td>0.90</td>
<td>0.16</td>
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<tr>
<td>(ndf, ddf)</td>
<td>(1, 190)</td>
<td>(1, 187)</td>
</tr>
</tbody>
</table>

Note: All models include baseline control and predictor variables.

$+ p < .10, * p < .05, ** p < .01, *** p < .001, **** p < .0001$
Table 6. *Regression models predicting maternal proximal processes including interactions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Positive Parenting</th>
<th>Psychological Distress</th>
<th>Mother’s NDW</th>
<th>Mother’s MLU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>β</td>
<td>β</td>
<td>β</td>
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<tr>
<td>Perceived Racial Discrimination X Nonstandard Schedule Model</td>
<td>0.06</td>
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<td>-0.01</td>
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<td>Nonstandard Schedule</td>
<td>0.04</td>
<td>0.16*</td>
<td>0.10</td>
<td>0.26**</td>
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<tr>
<td>Perceived Racial Discrimination</td>
<td>-0.13</td>
<td>0.06</td>
<td>-0.12</td>
<td>-0.28</td>
</tr>
<tr>
<td>Nonstandard Schedule x PRD</td>
<td>-0.13</td>
<td>0.06</td>
<td>-0.12</td>
<td>-0.28</td>
</tr>
<tr>
<td>Model F</td>
<td>3.05***</td>
<td>5.16****</td>
<td>2.11*</td>
<td>2.18*</td>
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<tr>
<td>(ndf, ddf)</td>
<td>(11, 202)</td>
<td>(11, 218)</td>
<td>(11, 213)</td>
<td>(11, 213)</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.10</td>
<td>0.17</td>
<td>0.05</td>
<td>0.05</td>
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<td>Change F</td>
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<td>1.88</td>
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<td>(ndf, ddf)</td>
<td>(1, 202)</td>
<td>(1, 218)</td>
<td>(1, 213)</td>
<td>(1, 213)</td>
</tr>
</tbody>
</table>

Note: All models include baseline control and predictor variables.  
+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$, **** $p < .0001$
Figure 1. Conceptual model of the contributions of maternal employment factors and perceived discrimination to children's language development.
Figure 2. The prediction of child PLS score by family income
Figure 3. *The prediction of child NDW by family income*

**Economic Hardship**
- Income-to-needs ratio

**NDW**
(spontaneous)

15 months 24 months
Figure 4. *The contribution of income and maternal work variables to the prediction of child PLS scores*
Figure 5. The contribution of income and maternal work variables to the prediction of children’s NDW
Figure 6. *The contribution of income and maternal work schedule to the prediction of positive parenting*
Figure 7. The contribution of income and maternal work schedule in the prediction of maternal distress
Figure 8. *Curvilinear Relationship between work hours and BSI*
Figure 9. The contribution of income and maternal work schedule in the prediction of maternal NDW
Figure 10. The contribution of income and maternal work schedule in the prediction of maternal MLU
Figure 11. *Mediated effects of maternal work schedules on child expressive language – Preschool Language Scale*
Figure 12. Mediated effects of maternal work schedules on child expressive language – number of different words

- Work Quantity
  - Total Work Hours
  - Work Hours Squared

- Economic Hardship
  - Income-to-needs ratio

- Work Quality
  - Shift Schedule

- Proximal Processes
  - Positive Parenting
  - Psychological Distress
  - Mother’s Language Input (MLU and NDW)

- NDW (spontaneous)

15 months

24 months
Figure 13. Moderated effect of maternal perceived racism and shift schedule on child PLS scores
Figure 14. *Moderated effect of maternal perceived racism and shift schedule on child NDW*

**Economic Hardship**
- Income-to-needs ratio

**Work Quantity**
- Total Work Hours
- Work Hours Squared

**Work Quality**
- Shift Schedule

**Perceived Racial Discrimination** (at 24 months)

**NDW** (spontaneous)

15 months

24 months
Figure 15. Moderated effect of maternal perceived racism and shift schedule on positive parenting

15 months

Economic Hardship
• Income-to-needs ratio

Work Quantity
• Total Work Hours
• Work Hours Squared

Work Quality
• Shift Schedule

Perceived Racial Discrimination (at 24 months)

Positive Parenting

15 months
Figure 16. Moderated effect of maternal perceived racism and shift schedule on maternal psychological distress
Figure 17. Moderated effect of maternal perceived racism and shift schedule on mother’s NDW
Figure 18. *Moderated effect of maternal perceived racism and shift schedule on mother’s MLU*
Figure 19. Moderated effect of marital status and shift schedule on child PLS scores
Figure 20. *Moderated effect of marital status and shift schedule on child NDW*
References


