

**The effect of language acculturation on parent-child interactions and
problem behaviors among children who are Hispanic**

by

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A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Human Development and Family Studies

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2011

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CHAPTER 1: INTRODUCTION

The population diversity of the United States continues to increase at a rapid rate. Between 1972 and 2007, the percentage of school-aged children from racially and ethnically diverse backgrounds doubled. On the other hand, the percentage of children who were White decreased by more than 20%, now accounting for only 56% of the entire school-aged population (NCES, 2009). The Hispanic¹ population alone has more than doubled in the past 20 years and is expected to more than double again by 2050 (United States Census Bureau, 2006). Today, 20% of the nation's children under age 9 are Hispanic (National Task Force on Early Childhood Education for Hispanics, 2007), 22% of all public school students are Hispanic (NCES, 2010), and 25% of all births in the United States are to at least one Hispanic parent (Fry & Passel, 2009).

With growing cultural diversity comes increasing linguistic diversity. The percentage of non-English speaking homes in the US has been steadily rising for the past three decades. Today, approximately 20% of the United States population speaks a language other than English in the home. Of this 20%, the majority speaks Spanish (62.3%), while others speak Indo-European languages (18.6%), Asian and Pacific Island languages (15%), or other languages (4.1%; United States Census Bureau, 2010). Amongst the school-aged population, 75% of children who speak a language other than English in the home speak Spanish (NCES, 2009). It is estimated by the year 2030, 40% of school aged children will come from non-English speaking households (Thomas & Collier, 1997).

¹ *Note:* The term Hispanic will be used to refer to migrants from Latin America, as studies indicate that this population prefers the term Hispanic over Latino by a margin of 3 to 1 (Tienda & Mitchell, 2006).

These children are commonly referred to as English learners (ELs) by researchers and professionals. ELs are children acquiring both the language used in their home setting and English (Roberts, 2008; Tabors, 2008). As the number of ELs, particularly ELs of Hispanic descent, continues to grow, it is important for researchers to focus on understanding the needs of this population, as well as specific strategies for meeting these needs (Dinh, Roosa, Tein, & Lopez, 2002; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995). Up to this point, much of the research on ELs has focused on their linguistic development and academic achievement (Dawson & Williams, 2008; Dinh, Roosa, Tein, & Lopez, 2002; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995). One area that is continually at the forefront of all childhood research is the investigation of behaviors deemed problem behaviors (e.g., aggression, withdrawal, defiance, conduct issues, etc.), yet this area has received limited attention with ELs. Gaining a better understanding of problem behaviors amongst all children, including ELs, is particularly important because such behaviors have been linked to a plethora of negative outcomes, including peer rejection (Wood, Cowan, & Baker, 2002), low academic achievement (Breslau, 2009), and substance abuse (King, Iacono, & McGue, 2004).

Research Problem

The few studies that have examined the display of problem behaviors among Hispanic youth have concentrated almost solely on school-aged children (Dawson & Williams, 2008; Dinh, Roosa, Tein, & Lopez, 2002; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995). In fact, after completing an exhaustive literature review of studies of Hispanic youth, Gonzales and colleagues (2009) note that most of this research has focused on adolescence, and often, the studies that do involve a broader age range are cross sectional

(i.e., comparing different age groups at one point in time). Due to the lack of research on young children who are Hispanic, and the limitations of cross sectional studies (e.g., differences due to generation, not change over time), they stress the need for research on the early childhood period of Hispanic youth development, as well as longitudinal research (i.e., comparing the same participants across time) that addresses change over time.

The Early Head Start Research and Evaluation Project (EHSRE) collected data from birth through 5th grade on children and families who were eligible for Early Head Start (EHS). This longitudinal dataset includes over 3,000 families across the United States who began the EHSRE study. Using this dataset to address the lack of research on the problem behaviors of Hispanic youth will allow for more sophisticated analyses that examine problem behavior development during early childhood, as well as changes over time.

Theoretical Background

Vygotsky's sociocultural perspective provides some of the theoretical groundwork for the current study. This theory purports that human development involves both biological development within individuals, as well as cultural development within a society. During the first few years of life, children are acquiring "cultural tools" through their interactions with others and objects. The term "cultural tools" "is a metaphor used by Vygotsky to describe a specific category of auxiliary devices or signs that humans create to gain control over their own behavior" (Bodrova & Leong, 2006, p. 247). These tools (e.g., languages, counting systems, teaching styles) allow humans to achieve higher mental functions, such as the ability to organize thoughts, memorize information, and reason. Vygotsky saw language as one of the most instrumental cultural tools in achieving higher mental functions because it

facilitates generalization, memorization, and the organization of thought (Bodrova & Leong, 2003).

Another key element in Vygotsky's theory is the zone of proximal development, or the difference between what a child can do alone and what a child can learn to do with help from a more highly skilled person (Vygotsky, 1978). When a child cannot perform a skill on his/her own, an adult can scaffold, or provide the minimal assistance needed to help the child become independent. For scaffolding to be successful, one must first know the developmental level of the child, then provide developmentally appropriate scaffolds (e.g., physical, verbal, procedural) to facilitate the learning process for the child (Vygotsky).

Vygotsky's theory has several implications for English learners. First, upon entering a classroom where English is the language of instruction, ELs with little to no English proficiency do not have access to the same cultural tools (i.e. the English language) that teachers in the classroom do. Overtime, if ELs learn and become proficient in English, they will have access to more cultural tools (e.g. the Spanish language and the English language) than a monolingual teacher (e.g. a teacher who speaks only English). However, upon first entering the classroom, the ability of ELs to comprehend information presented in English during interactions with teachers and peers, and their ability to achieve higher mental functions as a result of this information, is limited. Similarly, the ability of English speaking adults and peers to communicate with and scaffold an EL child is typically inadequate because they often do not understand or speak the child's home language, do not understand the child's level of verbal or social development, may not understand the cultural background of the child, and do not have the tools or strategies to provide appropriate scaffolds. Not only does this affect the child's verbal/language development, but it also has implications for the

child's social emotional development. When communication is strained between a child and a teacher, or a child and a peer, it can affect the child's ability to interact with others, which could lead to frustrations and the display of problem behaviors.

Conversely, ELs who are more proficient in English may have the opposite concern. While they are able to communicate in school settings where English is the primary language, if they do not continually use and maintain their home language, their ability to fully express themselves and their feelings to family members may be insufficient (Wong Fillmore, 1991). Research has shown that this is an issue particularly salient for those children whose parents who are primary speakers of the non-English home language (Wong Fillmore, 2000).

People living in the United States (where English is the primary language) and speaking a language other than English in their homes will use English to varying degrees. Some may never speak any English, some may speak both English and their home language (each to varying degrees), or some may learn and begin speaking only English. Depending on the individual's needs and preferences, the neighborhood in which he/she lives, and the available schooling options, a person may fall into any one of these categories. The participants in the current study are all Hispanic. Some were from Spanish speaking homes and some were from English speaking homes. The children attended a variety of childcare and preschool settings, some in which only Spanish was spoken, some in which only English was spoken, and some in which both English and Spanish were spoken. However, all children attended grade schools where English was the language of instruction, and regardless of the language used in the children's home environments, at 5th grade, all children were proficient enough in English to complete assessments (e.g., be asked questions

by an interviewer and respond to them) in English (Administration for Children and Families, 2002a). On the other hand, some parents in the study never completed interviews in English. These language similarities and differences between parents and children are the focus of the current study.

Bronfenbrenner's (1979) ecological theory also provides a theoretical framework for the current study. This theory focuses on the context in which a child develops and posits that the early environments of a child, such as the school, home, and community, as well as the interactions within and among these environments, shape the child's development.

Specifically, Bronfenbrenner (1977) examined the environments in which an individual develops, and how these environments directly and/or indirectly affect the individual's development. There are four levels of environments, each defined by how directly they impact the individual. The first level is the microsystem, or the environments that have continual contact and interactions with the individual (e.g., home, school). The second level, known as the mesosystem, consists of two or more microsystems and the interactions between these microsystems (e.g., the interaction between the home and school environments). The third level is the exosystem, which extends beyond the mesosystem to encompass environments that, although not directly containing the individual, indirectly influence the individual through other environments (e.g., the government implements No Child Left Behind, which impacts the schools, which in turn impacts the individual child). The fourth level, known as the macrosystem, refers to the effects of the societal and cultural norms on the individual (e.g., the belief that parents should take sole responsibility for raising their children). Finally, the chronosystem examines how changes over time in all of these environments and changes over time in the individual affect development (e.g., the timing of

the death of a sibling; Bronfenbrenner, 1994). The current study examines the microsystem and the language similarities and differences between parents and children within this system.

CHAPTER 2: LITERATURE REVIEW

Acculturation

Definition

Much of the research on ELs who are Hispanic and the effects of English language development have been examined by studying the concept of acculturation. Acculturation has been defined historically as the process of change that occurs when persons from one culture come into continuous contact with another culture (Berry, 1995). However, the process of acculturation is continually changing as our world diversifies. In the current study, acculturation involved the process of change that occurred when a person from a non-English speaking home attended a school, or was the parent of a child who attended a school, where English was the primary language of instruction.

The process of acculturation can lead to several different outcomes. When a person chooses to maintain or adapt to only one of the cultures, it is either assimilation or separation. Assimilation occurs when the original culture is no longer maintained, but instead, the person adapts to the new culture. On the other hand, when a person preserves his/her original culture and chooses not to interact with the new culture, separation occurs. Another possible outcome is a bicultural identity obtained through integration, in which the home culture is sustained, yet interactions with the new culture also take place. Finally, people may not identify with either culture, known as marginalization. Often this occurs because it is difficult to hold onto the original culture when no longer submersed in it, yet the person may have little interest in engaging with the new culture (Berry, 2001).

Critics of acculturation research note that historically, acculturation has been poorly conceptualized and defined. In studies of the acculturation of Hispanics into the U. S. society,

measures of acculturation have included everything from English language skills and immigrant status to discrimination conflicts (Dinh, Roosa, Tein, & Lopez, 2002; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995), family acculturation conflicts, ethnic awareness of prejudice, and conflicted ethnic loyalty (Hokoda, Galvan, Malcarne, Castaneda, & Ulloa, 2007). In a meta-analysis of research about Hispanic acculturation, results revealed that two-thirds of the articles did not even define acculturation. However, in this meta-analysis, when defined, the most common component of acculturation was found to be language preference and/or language usage (Hunt, Schneider, Comer, 2004). Not only is language frequently used as an element of acculturation, it is also found to be the most valid measure of acculturation. Through factor analysis studies, research has established that language preference and/or language usage accounts for the largest amount of variance of any of the acculturation components (Barona & Miller, 1994; Coronado et al., 2005). Language usage is also of particular interest in the early childhood research field, as studies have shown that when children from non-English speaking families who are living in the United States learn English, they are susceptible to losing their family's home language during this process. This has been shown to have negative effects on children due to their potentially limited ability to speak with family members (Wong Fillmore, 1991). It is therefore recommended that while learning the primary language of the country in which one resides, children also maintain their family's home language (Wong Fillmore, 2000). Because of its frequent use in the measurement of acculturation, its strong validity, and its relevance to early childhood, the current study examines language usage as a measure of language acculturation (i.e., the process of change that occurs when a person who speaks one language comes into continuous

contact with people who speak a different language; Hung Ng, 2007). Specifically, language acculturation is operationalized as “the language used for assessment” in the current study.

Language Acculturation

There is a distinct difference between language acculturation and second language acquisition. Second language acquisition refers to the process of learning a second or additional language (in this instance, English). It assumes that the person does, indeed, learn and likely use the second language language. Language acculturation, on the other hand, refers to the change that occurs when a person who speaks one language as his/her primary language comes into constant contact with people who speak a different language as their primary language. It does not, however, assume that the person uses or even learns the second language.

As noted above, the process of acculturation, in this instance language acculturation, looks very different for each individual. Because all children in the study completed assessments in English at 5th grade, the language acculturation process for children from homes where Spanish was the primary language included the process of second language acquisition. On the other hand, some parents in the study never completed interviews in English. Their process of language acculturation looked very different from that of their children and did not include the process of second language acquisition. These language acculturation similarities and differences between parents and children are the focus of the current study.

In order to better understand the language acculturation processes of the children in this study, it is important to understand English language acquisition. There are two forms of English language acquisition: simultaneous and sequential. Simultaneous learners are

introduced to two languages from birth. Sequential learners start with one language at birth, then learn English at a later point in time (Espinosa, 2008; Tabors, 2008). Because the number of Hispanic families from homes that spoke both English and Spanish was not large enough to analyze separately ($n = 8$), all children in the current study came from homes where only English was spoken or only Spanish was spoken at the beginning of this study. It is therefore assumed that children from Spanish speaking homes were sequential learners of English. To better understand their process of learning English, the sequential language acquisition stages are described below.

Children who are sequential learners (also referred to as English language learners in this text) go through several stages upon entering a classroom where their primary language is not spoken. During the first stage, children will continue to speak their primary language and attempt to communicate with children and staff in a language other than English. The duration of this stage varies, as some children will quickly give up on attempting to communicate in another language, while others persist, some for several months (Espinosa, 2008; Tabors, 2008). The duration of this stage may be affected by the child's personality. Children who are more reserved tend to spend a longer period of time in this stage than those who are socially outgoing (Tabors).

Once children realize they are not being understood in their primary language, they enter a nonverbal period in which they forego attempts to communicate in their primary language (Espinosa, 2008; Tabors, 2008). During this period, children will attempt to communicate through nonverbal communication strategies. For example, a child may hold up a toy to get the attention of peers or teachers. He/she may point to a toy, requesting to play with it. A child in the nonverbal stage might also shriek or squeal as a form of protesting, or

he/she may repeat behaviors that make others laugh, in an attempt to joke with them. These examples demonstrate the four primary forms of nonverbal communication of ELs during the nonverbal period: attention getting, requesting, protesting, and joking. Though these behaviors may work in some instances, they are also limited because the child cannot verbally express his/her feelings and motives. For this reason, some children may revert to using nonverbal actions, such as gestures, to communicate (Tabors).

Remaining in the nonverbal stage can have negative social effects for the child. For example, children who are ELs may frequently be “left out.” Because they cannot communicate verbally with other children in the classroom, they may not be truly included in social activities with other children. Also, peers may treat a child who is an EL more like an infant than a peer due to the lack of verbal communication. For example, the attempts of English speakers to engage in play with ELs may include tickling, running around, or passing toys back and forth, all of which resemble behaviors an older child would exhibit when playing with an infant. Finally, English speakers may use simplified speech that would normally be directed at an infant, such as, “Me help” or “Me do it” (Tabors, 2008).

During this nonverbal period, children are not only attempting to communicate through nonverbals; they are also observing and learning about the English language from their peers and teachers. For example, ELs will silently watch and observe their English speaking peers. Another learning strategy used during the nonverbal period is rehearsing. EL children will begin making verbalizations in an attempt to replicate and learn the English language. They may also use repetition or rehearsal drills (e.g., I ran, I run, I am running) in an attempt to improve their English speaking abilities (Tabors, 2008).

The final stage of sequential language acquisition is known as sound experimentation. During this stage, ELs are learning the sounds of the English language, yet they have not mastered the English vocabulary (Espinosa, 2008; Tabors, 2008). They will likely experiment with the sounds of their new language, though these sounds will not make intelligible English words. For example, the child may form an entire sentence that includes sounds from the English language but does not actually include an English word. Eventually, these unintelligible sounds will be filled in with other English words to form a complete sentence (Tabors).

Understanding the language development of English learners provides insight into their social development. Each of the stages could have a unique effect on their social interactions and the way others perceive their social interactions. Depending on the language acquisition stage, children may be perceived as socially unskilled, socially withdrawn, lacking attention skills, lacking proper conduct, or exhibiting problem behaviors.

As we examine the effect of language acculturation on social interactions, it is important to note the lens with which this paper is written. Historically, culturally and linguistically diverse populations were viewed with a “deficit lens,” which assumed that children had a deficit due to their backgrounds (e.g., genetic or cultural; Pianta & Walsh, 1996). While this study examines the literature regarding the Hispanic population, as well as relationships with social development and academic achievement, this information is used solely to provide readers with information on the background of research in this field, and not to in any way view participants with a “deficit lens”. The relationships among these variables are full of richness and complexity, and the extent to which they are examined is limited to the scope of this study.

Problem Behaviors

Definition

Problem behaviors (also referred to as negative behaviors) are often classified as externalizing or internalizing by child development researchers. Externalizing behaviors are characterized by an under-control of emotions; they are expressed toward others (Achenbach & Edelbrock, 1978) and are committed in an aggressive or high energy manner (Semrud-Clikeman, 2007). They include behaviors such as troubles with friendships, disruptiveness, aggression (Achenbach & Edelbrock, 1978), bragging, teasing, and fighting (Frick et al., 1993). On the other hand, internalizing behaviors are distinguished by an over-control of emotions, and they affect the inner psychology of the child, rather than the external environment. Examples of these behaviors include dependency, anxiety, social withdrawal, and depression (Achenbach & Edelbrock, 1978).

Internalizing and externalizing behaviors have different trajectories across the lifespan. Although individuals vary greatly, the average trajectory (according to studies of ethnically diverse populations) for externalizing behaviors shows that these behaviors are most prevalent in early childhood, then decrease throughout adolescence as children's verbal skills and ability to express themselves increase (Bongers, Koot, van der Ende, & Verhulst, 2003; Lahey et al., 2000). On the other hand, the average internalizing behavior trajectory shows that these behaviors are less frequent in early childhood, but increase throughout adolescence (Bongers et al., 2003). Because externalizing behaviors are greatest among young children, the impact of language acculturation on externalizing behaviors from early to middle childhood (24 months to 5th grade) will be examined. Since internalizing behaviors

occur infrequently during early childhood, but increase in adolescence, the impact of language acculturation on internalizing behaviors at 5th grade will also be studied.

Problem Behaviors and Associated Negative Outcomes

It is important to understand problem behaviors because they are associated with a number of negative outcomes. Some of these negative outcomes occur concurrently with the display of problem behaviors, while others occur years after the onset of problem behaviors.

Peer relations. First, problem behaviors are associated with poor peer interactions. Researchers have shown that children who exhibit externalizing behaviors often lack social competence (Webster-Stratton & Woolley, 1999). They struggle making friends due to their inability to appropriately approach other children or play in groups with other children (Ladd, Price, & Hart, 1990). Exhibiting externalizing behaviors is also significantly related to peer rejection in both preschool (Wood, Cowan, & Baker, 2000) and adolescence (McArdle, O'Brien, Macmillan, & Kolvin, 2000). Along with externalizing behaviors, internalizing behaviors affect peer relationships. In particular, internalizing behaviors are strongly related to peer victimization (Reijntjes, Kamphuis, Prinzie, & Telch, 2009).

The relationship between problem behaviors and peer relationships is of concern not only because of the immediate, negative effects children experience from peer rejection, but also because of the potential long-term, adverse effects. Researchers have shown that problem behaviors and negative peer relationships affect school success and attitudes toward school. Specifically, disruptiveness (e.g., hyperactivity, aggressiveness, opposition) has been shown to be a significant predictor of later school dropout (Vitaro, Larocque, Janosz, & Tremblay, 2001), and negative peer relationships have been shown to increase the likelihood of school failure (Steinberg, 1996). As a whole, this researchers have shown that problem

behaviors negatively affect peer relationships, which in turn negatively impact academic achievement.

Research on ELs who are Hispanic suggests that this population in particular may be at greater risk for facing these negative outcomes. Studies indicate that ELs have a greater probability of experiencing peer (Edwards & Romero, 2008; Hovey, 2000; Olsen, 2000) and academic difficulties (Reardon & Gallindo, 2007). One study in particular examined the self-evaluations of elementary-aged English learners and English speakers. This study revealed that EL children have lower perceptions of social closeness with their peers and lower academic self-concepts than English speaking children (Stanovitch, Jordan, & Perot, 1998).

Academic Achievement. Other studies have examined a more direct relationship between problem behaviors in early childhood and later academic achievement. Masten and colleagues (2005) revealed that the manifestation of problem behaviors in childhood has a negative effect on academic achievement in adolescence. Likewise, in a meta-analysis of six studies, Duncan and colleagues (2007) found that internalizing and externalizing behaviors predicted later academic difficulties. Other research indicates that teacher ratings of internalizing problems, externalizing behaviors, and attention difficulties at age 6 were significant predictors of lower math and reading achievement at age 17. These results were found to be significant even after controlling for several other factors, including maternal education, marital status, IQ, and inner city residence (Breslau, 2009). It is important to note, however, that these studies established correlation, not causation. While behaviors deemed problematic precede academic difficulties, other factors may be the cause (e.g., perhaps this is a self-fulfilling prophecy that occurs when teachers rate children as exhibitors of problem behaviors).

This information is particularly pertinent to the Hispanic population. Researchers have shown that children who are Hispanic start Kindergarten lagging behind their peers on measures of academic achievement. While the gap decreases over the elementary years, a disparity remains through the 5th grade (Reardon & Gallindo, 2007). Also, children who are Hispanic, African American, and Native American have higher rates of absenteeism, suspension, and high school drop out, along with lower high school completion rates than children who are White or Asian (Kao & Thompson, 2007; NCES, 2009). Given this research, studying the problem behaviors of children who are Hispanic during early childhood could shed light on areas of intervention during these early years that could lead to increased academic success in later childhood.

Substance Abuse. Beyond the classroom, associations between problem behaviors and substance abuse have been established. King and colleagues (2004) studied the associations between externalizing disorders and substance use, including alcohol, nicotine, and marijuana, among adolescents. Results showed that children with an externalizing disorder (ADHD, ODD, or CD) by age 11 had an increased risk for trying all of these substances by age 14. Not only were they at risk for trying alcohol, cigarettes, and marijuana, but they were also at risk for becoming regular users of these substances. Another study recognizes the bidirectional influences of problem behaviors and substance abuse. While problem behaviors can precede substance abuse, they can also result from it (Clark & Neighbors, 1996). These studies suggest that the display of problem behaviors is correlated with, but not predictive of, substance abuse. This research is relevant to the Hispanic population as one study found that Hispanic adolescents with high levels of acculturation are more likely to abuse substances than Hispanics with low levels of acculturation (Allen,

Elliot, Fuligni, Morales, Hambarsoomian, & Schuster, 2008). Taken together, researchers have shown that problem behaviors, as well as high levels of acculturation among Hispanic adolescents, are related to substance use. The current study will investigate the association between language acculturation and problem behaviors among Hispanic youth, which could provide insight into areas of early intervention that can decrease the risk of substance use.

Problem Behaviors and Associated Risk Factors

Gender. Gender differences are often found in the display of problem behaviors. In particular, girls tend to display more internalizing behaviors, while boys tend to exhibit more externalizing behaviors (Kramer, Krueger, & Hicks, 2008; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). For example, one study found that being female was a predictor of internalizing behaviors, while being male was a predictor of externalizing behaviors (Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003). Similarly, Bongers and colleagues (1993) found that boys exhibit more externalizing behaviors, and girls exhibit more internalizing behaviors throughout childhood and adolescence. Because of these recorded differences, the current study will control for gender differences.

Income. Family income is another factor that influences problem behaviors. In particular, children from low income families tend to exhibit more internalizing and externalizing behaviors than children from high income families (Dearing, McCartney, & Taylor, 2006; Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003). For example, Keiley and colleagues (2003) discovered that both mothers and teachers rated children from low SES families more negatively on externalizing behaviors than children from high SES families. Similarly, Slopen and colleagues (2010) studied over 2,800 children between the ages of 4 and 16. Parent reports on the Child Behavior Checklist (CBCL) revealed that both

internalizing and externalizing behaviors were more common among children from low income families than children from high income families. This risk factor is particularly relevant to the Hispanic population in the current study, as Hispanics are overrepresented in poverty. Twenty-eight percent of children who are Hispanic live in poverty, a percentage far greater than that of children who are non-Hispanic white (NCES, 2009). Because income has a significant effect on ratings of problem behaviors, the current study will control for income.

Language Acculturation and Problem Behaviors

An association between language acculturation and problem behaviors has been established. Findings vary by the age of the children being studied, and by the person rating the problem behaviors of the child. First, studies have looked at teacher-rated problem behaviors. Dawson and Williams (2008) investigated the impact of English proficiency on teacher-rated internalizing and externalizing behaviors of children who are Hispanic in grades K - 3. Results revealed that children who struggled with English proficiency in first grade were rated by teachers as exhibiting more externalizing behaviors in third grade. These findings indicate that limited English skills in the early elementary years can be a stressor that negatively impacts the display of problem behavior in later elementary. Conversely, research on pre-Kindergarteners found that children from Spanish speaking homes were rated by teachers as exhibiting fewer problem behaviors than children from English speaking homes. Teachers also gave more positive teacher-child relationship quality ratings to children from Spanish speaking homes than children from English speaking homes (Luchtel, Hughes, Luze, Bruna, & Peterson, 2010). Taken together, these studies suggest that the impact of language acculturation on the problem behaviors exhibited by children in school varies by

age. The current study will extend this research by examining the problem behaviors of children from 24 months to 5th grade.

Second, one study examined the effect of acculturation on self-reported problem behaviors of children. Dinh and colleagues (2002) studied a group of 4th to 8th grade children who are Hispanic, one-third of whom were foreign born, and two-thirds of whom were born in the United States. In this study, two of the three measures of acculturation were language based (e.g., language spoken at home and language used to complete surveys), exemplifying the importance of language in the acculturation process. Self-reports of problem behaviors indicated that acculturation did not have a direct effect on problem behaviors among these children. Instead, parental involvement mediated the relationship between acculturation and problem behaviors. Higher levels of acculturation (indicated by being born in the United States and speaking more English) were associated with lower levels of parental involvement, which in turn led to more problem behaviors. As a result of their findings, the researchers suggest that family context variables should be taken into account when examining the relationship between acculturation and problem behaviors, particularly among Hispanics, as intergenerational and language conflicts can arise due to children acculturating faster than parents/caregivers. Because of this, the current study investigates the role of parental warmth [the extent to which the parent displays warmth toward the child (e.g., talks to child, praises child, hugs child)] in mediating the relationship between language acculturation and problem behaviors.

Finally, one study has examined both parent and teacher reports of problem behaviors among children who are Hispanic. In a study of adolescent Hispanic males, acculturative stressors, including language conflicts (e.g., difficulties getting along with others because

participant does not speak English well), were related to an increase in problem behaviors. Specifically, foreign born participants with high levels of language conflicts were rated by both parents and teachers as exhibiting significantly more problem behaviors than those children with low to moderate language conflicts. U.S. born participants with high acculturative stress ratings (including high levels of language conflicts) were rated by teachers only as exhibiting more problem behaviors than their peers who had low to moderate levels of acculturative stress in these areas (Vega, Khoury, Zimmerman, Gil, & Warheit, 1995). This study provides evidence that language conflicts negatively impact the display of problem behaviors in the home environment for foreign born Hispanics, but not for U.S. born Hispanics. The current study aims to further investigate the relationship between language acculturation and parent-rated problem behaviors across time by examining the effects of language acculturation on parent ratings of problem behaviors from 24 months to 5th grade, and by examining the mediating role that parental warmth plays in this relationship.

Language Acculturation, Parent-Child Relationships, and Problem Behaviors

Research suggests that while there is a relationship between language acculturation and problem behaviors, there may be several factors that mediate this relationship, especially the quality of parent-child interactions. As noted earlier, Dinh and colleagues (2002) found that acculturation did not have a direct effect on problem behaviors. Instead, parental involvement was a significant mediator of the relationship between acculturation and problem behaviors. This finding emphasizes the crucial role that parents play in their children's development of problem behaviors. Though other studies have not examined parenting behaviors as a mediator of the relationship between language acculturation and

problem behaviors, studies have established separate links between language acculturation and parent-child interactions, as well as parent-child interactions and problem behaviors.

Language Acculturation and Problem Behaviors. Wong Fillmore has been a leading researcher on the effects of language acculturation on parent-child interactions for years. In an early study of nearly 700 non-English speaking families living in the United States, Wong Fillmore (1991) found that the earlier a child begins learning English in an education program, the more profound and negative effect it will have on his/her linguistic interactions with family members. When children are enrolled in English or bilingual programs at an early age, they begin using English to communicate with siblings and parents more frequently. As a result, the family is nearly five times more likely to shift the language used at home to English than families of children enrolled in home language programs. The study revealed that while many parents attempt to switch the language used in the home to English, they are not proficient at communicating via English. As a result, the quality of the parent-child interactions decreases. Since this early study, Wong Fillmore (2000) has gone on to describe the negative effects that losing a home language can have on family interactions. These negative effects include losing the ability to communicate with extended relatives, having limited communications with parents, and experiencing difficulties identifying with a cultural background and establishing an identity.

Parent-Child Interaction Quality and Child Behavior Development. Other studies have found the quality of parent-child interactions (e.g., parental warmth) to be associated with behavior development. In particular, negative parent-child interactions are related to increased behavior problems. For instance, Brotman and colleagues (2005) found that parental coercion, criticism, harsh discipline, and lack of warmth were all associated with

children's display of problem behaviors. Frye and Garber (2005) demonstrated that maternal depression and maternal criticism were related to higher levels of internalizing and externalizing behaviors in adolescence. Other studies have revealed that lower levels of parental warmth toward the child, as well as higher levels of parental psychological control and/or parental behavioral control over the child, were also associated with problem behaviors among children (Caron, Weiss, Harris, & Catron, 2006; McKee, Colletti, Rakow, Jones, & Forehand, 2008). On the other hand, positive parental factors have been linked to positive behavioral development in children. In a longitudinal study of families and children, Olson and colleagues (2002) found that cognitive stimulation and low maternal restrictiveness were associated with the development of positive behaviors in early childhood. In addition, Brotman and colleagues (2005) discovered that low parental negativity and high levels of stimulation were related to more positive social behaviors among children.

Taken as a whole, Wong Fillmore found that language conflicts can lead to a decrease in parent-child communication and a decrease in the quality of parent-child interactions. Other research supports the link between poor quality parent-child interactions and the display of problem behaviors. As a result of these findings, the current study will investigate the effect of language acculturation on parent warmth (a measure of the quality of parent-child interactions) and problem behaviors among children.

CHAPTER 3: METHOD

National Early Head Start Research and Evaluation Projects

The data used in the current study were collected during the Early Head Start Research and Evaluation Project (EHSRE). In 1995, the Administration of Children, Youth and Families (ACYF) started the Early Head Start program for low income families with children ages birth to three years (Administration for Children and Families, 2002a). At that time, ACYF also funded a nationwide, longitudinal EHSRE study to determine the effects of the new Early Head Start program on low income families. They selected 17 Early Head Start programs to participate in the study, all of which were representative of the locations served (e.g., urban vs. rural) by the program, as well as the program approaches offered (e.g., center, home, and mixed). Between 1996 and 1998, EHSRE recruited 3,001 families who qualified to be served by these programs to participate in the study. In order to be qualified for the programs, families had to meet income eligibility requirements, and they had to include a pregnant woman or a child 11 months or younger. EHSRE researchers purposefully selected over 3,000 families, although they were only capable of serving approximately half of these families. Recruiting twice as many families as could be served allowed for randomization of families into two groups: a program group (i.e., families who were enrolled in the Early Head Start program) and a control group (i.e., families who were not allowed to receive Early Head Start services, but could access other community resources; when their child was three years old, the child could be enrolled in a Head Start). Demographic characteristics of the program and control groups were not significantly different (Administration for Children and Families). Participants in the current study are from both the program and control groups.

Data Collection

The EHSRE study took place in several waves (For a complete description of the study design, see Administration for Children and Families, 2002a). Demographic information was collected during the application process (i.e., when the mother was pregnant with the target child, or when the target child was 11 months or younger) via questionnaires and interviews with the primary caregiver. All other variables used in the current study were obtained when the target child was 14 months, 24 months, or 36 months old; in pre-kindergarten; or in 5th grade. This information was collected via the following formats: self-administered questionnaire, interview, child assessment, or observation.

Participants

The current study consists of a subsample from the larger EHSRE sample. The criteria for this subsample were (1) children who were identified by parents as Hispanic, and/or children who had at least one parent identify him/herself as Hispanic, and (2) children who had complete data for outcome variables. This means that in order to be included in the study, children had to have complete Child Behavior Checklist (CBCL) data for the 24 month, 36 month, pre-Kindergarten, and 5th grade time points. When EHSRE researchers initially collected the data used in this study, researchers employed data imputation techniques to account for missing values for any participant with less than 25% of the items missing for any one scale (Administration for Children, Youth, and Families, 2002a). For example, if a participant was missing less than 25% of the items on the CBCL, these missing data were imputed with the mean score of the items answered by caregivers. The amount of data requiring such imputation techniques was low, although specific numbers or percentages were not detailed (Administration for Children, Youth, and Families). Participants with

complete data at all four time points, and participants with less than 25% of the items on the CBCL missing at any given time point (which were imputed with the mean score of the items answered by caregivers) were included in the study. Further data imputation techniques were then utilized for predictor and mediating variables.

Including only these participants follows the analysis protocol used by EHSRE, in which only participants with complete data for outcome variables were included in analyses. Hispanic participants included in the study (i.e., those completed the full CBCL at all measurement time points; $n = 163$) did not differ from Hispanic participants not in the study (i.e., those who did not have complete CBCL data for all 4 measurement points; $n = 337$) by household income at baseline or 5th grade, highest grade completed by primary caregiver at baseline or 5th grade, or primary caregiver's employment status at baseline or 5th grade. Participants included and not included in the study were compared at baseline and 5th grade because these time points contained the most complete set of demographic data for each group. Also, it was assumed that differences among participants included and not included would be greatest before entering the study or upon completion of the study. Demographic information for participants included in the study can be found in Table 1.

Measures

Language Acculturation

Language Usage. At 24 months, 36 months, pre-Kindergarten, and 5th grade, direct assessments were administered to the target child in either English or Spanish, and interviews were conducted with the parent in either English or Spanish. In order to determine the language in which children should be assessed and parents should be interviewed, interviewers asked parents/caregivers to identify the language in which it would be easiest

for themselves and the children to complete the assessments/interviews. Occasionally, this meant that the interviewers began an assessment in English, but switched to Spanish if the participant was struggling, or vice versa. At 5th grade, all children completed the direct assessments in English, the language of instruction in all their schools.

Participants were divided into three groups. The English only group consisted of participants from English speaking homes; both the parent and child completed assessments in English at all four time points. The Spanish concurrent group consisted of participants from Spanish speaking homes. In this group, both parents and children began completing assessments in English at approximately the same time (i.e., both between the two year and pre-Kindergarten time points, or both at the 5th grade time point). Finally, The Spanish non-concurrent group also consisted of participants from Spanish speaking homes. Children in this group began completing assessments in English much earlier than their parents. Specifically, children began completing assessments in English between the 24 month and pre-Kindergarten time points while parents did not complete interviews in English until at least 5th grade, or children completed assessments in English at 5th grade while parents never completed interviews in English.

Problem behaviors

CBCL. The Child Behavior Checklist (CBCL) is a measure designed to assess the negative aspects of a child's social-emotional development. There are two versions of the checklist: one for children ages 1½ - 5 years, and another for children ages 6 - 18 years (Achenbach & Rescorla, 2000a, 2000b). Because the EHSRE followed the children from birth through 5th grade, both versions were utilized. Although the items themselves and number of items vary between the two versions, the CBCL has been found to be a valid and

reliable measure of externalizing behaviors across time (Achenbach & Rescorla, 2000a, 2000b).

At all time points, the CBCL was administered in interview format, between an interviewer and the primary caregiver of the child (Administration for Children and Families, 2002a). Both versions of the CBCL can be broken down into internalizing and externalizing problem behavior subscales (Achenbach & Rescorla, 2000a, 2000b). Due to the nature of data collection and research regarding the prevalence of these behaviors during childhood, the externalizing subscale was analyzed at all four time points, and the internalizing subscale was analyzed at the 5th grade time point only.

CBCL for ages 1½ - 5. At the 24 month, 36 month, and pre-kindergarten time points, shortened versions of the CBCL for ages 1½ - 5 were administered. The items included in these abbreviated versions were chosen by panels of experts from both the Family and Child Experiences Survey (FACES) and the Head Start Quality Research Consortium. These shortened versions included the externalizing subscale, but excluded the internalizing subscale of the CBCL (Administration for Children and Families, 2002a). The externalizing scale, typically comprised of 24 items (Achenbach & Rescorla, 2000a), consisted of only 22 items in this study. The items “wanders away” and “hurts animals or people without meaning to” were omitted from the interview because the panels felt these items did not conceptually represent externalizing behaviors (Administration for Children and Families). During the interview, caregivers rated children on a scale from 1 to 3 for each of the 22 externalizing items (1 = Not true; 2 = Somewhat or sometimes true; 3 = Very or often true; Administration for Children and Families, 1998). For ease of interpretation, all scores were recalculated on a 0 to 2 scale (0 = Not true; 1 = Somewhat or sometimes true; 2 = Very or often true), summed

to create an externalizing subscale total score ranging from 0 to 44 (higher scores indicate more problem behaviors), and turned into a percent. Changing scores to a percentage allowed externalizing scores to remain compatible from the 24 month to 5th grade measurement time points, even though the number of items comprising this construct changed at the 5th grade time point.

CBCL for ages 6 - 18. At the time of the 5th grade follow-up, the entire CBCL for ages 6 - 18 was utilized to assess the negative aspects of the target child's social-emotional behaviors. Caregivers rated children on a scale from 1 to 3 for each of the 113 items (1 = Very true; 2 = Somewhat or sometimes true; 3 = Not true; EHS Maternal Interview, 2010). Because the items were rated in the opposite direction at the 5th grade time point when compared to the younger three time points, the 5th grade items were reverse coded on a 0 to 2 scale (0 = Not true; 1 = Somewhat or sometimes true; 2 = Very or often true). Items were then summed to create total subscale scores (higher scores indicate more problem behaviors). A total of 35 items were summed to create the externalizing total scores, which range from 0 to 70, and 32 items were summed to create the internalizing total scores, which range from 0 to 64. Similar to what was done at the earlier time points, subscale scores were then turned into percents to maintain compatibility across measurement time points.

The CBCL for ages 1½ - 5 and the CBCL for ages 6 - 18 were normed using data from the National Survey of Children, Youths, and Adults. This multistage study took place in 1999 and 2000. The sample was representative of the contiguous United States and included culturally diverse participants from 40 states. For the CBCL for ages 1½ to 5, 13% of the norming population identified themselves as Hispanic, and for the CBCL for ages 6 to 18, 9% of the norming population identified themselves as Hispanic (Achenbach & Rescorla,

2006). Test-retest reliability for the CBCL for ages 1½ - 5 is $r = .81$ for the entire measure, and $r = .87$ for the externalizing subscale. The test-retest reliability of the CBCL for ages 6 - 18 ranges from $r = .90$ to $r = .92$ for the entire measure, the internalizing subscale, and the externalizing subscale. For both forms of the CBCL, content validity and criterion validity for the problem behavior subscales (internalizing and externalizing) were established by ensuring that all items discriminated between referred and non-referred children at a significant level ($p \leq .01$; Achenbach & Rescorla, 2000b). Construct validity for both versions was established through significant associations with other scales measuring the same constructs (Achenbach & Rescorla, 2006).

Parental Warmth

HOME. The Home Observation for Measurement of the Environment (HOME; Elardo & Bradley, 1981). Inventory is designed to measure the overall quality of the child's home environment. It is comprised of a series of yes/no questions. To complete the HOME inventory, a data collector enters the home of the target child while he/she is awake and watches the child while he/she interacts with the primary caregiver. The goal is to observe the parent and child in their everyday environment, going about interactions as usual. Approximately two thirds of the items are completed via observation, and the other third are completed via parent interview (Elardo & Bradley).

There are several versions of the HOME. In the current study, although the HOME was administered at the 24 month, 36 month, pre-Kindergarten, and 5th grade time points, only data from the latter three time points will be analyzed. At each of the latter three time points, the same five questions regarding parental warmth were asked, making the measure consistent across time. Also, the variables created from these data point were most suitable

for analysis (e.g. normally distributed). It is also important to note that parental warmth is frequently used as a measure of parent-child relationship quality. While other measures of parent-child relationships have been utilized in studies similar to the current study (e.g. responsivity, involvement), parental warmth was chosen because it was the only dimension of the parent-child relationship that was measured consistently across more than two time points.

In the EHSRE study, questions were taken from the HOME-Short Form Preschool version at the 36 month time point (Administration for Children and Families, 2002a), from the Early Childhood (EC) HOME at the pre-Kindergarten time point (Administration for Children and Families, 2001), and from the Early Adolescent (EA) HOME at the 5th grade time point (Administration for Children and Families, 2006). Throughout these time points, five questions regarding the parent's warmth toward the child were asked/observed consistently, including (1) Parent talks twice to child during visit, (2) Parent answers one of child's questions or requests verbally, (3) Parent spontaneously praises child's behavior or qualities twice during visit, (4) Parent's voice conveys positive feeling when speaking of or to child, and (5) Parent caresses, kisses, or cuddles child once during visit (Administration for Children and Families). These items were scored as 0 (behavior did not occur) or 1 (behavior occurred). Items were then summed to create a total score ranging from 0 to 5, with higher scores indicating more parental warmth.

The HOME was normed on a sample of 174 families from ethnically and economically diverse backgrounds (Caldwell & Bradley, 1984). During the EHSRE study, the inter-rater reliability for administration of the HOME was $r = .90$ (Administration for

Children and Families, 2002c). The internal consistency of the five items used to measure warmth at each of the time points ranged from .98 to >.99.

Factors Affecting Problem Behaviors.

Poverty. The number of people living in the household and the annual or monthly household income were ascertained during the application process, at the pre-Kindergarten time point, and at the 5th grade time point. The U.S. Census Bureau calculates poverty thresholds based on the annual household income and the number of people living in the household. Because data in the current study were collected over a period of three years for each data time point (e.g., 24 month data was collected from 1994 to 1996), the average poverty threshold during the years in which data were collected was calculated, and this number was compared to the household's annual income. Households falling below the poverty threshold were assigned the value one, and household above the poverty threshold were assigned the value zero. These dichotomous values were then summed, creating poverty scores ranging from zero to three, with higher scores indicating a greater amount of time spent in poverty.

Group. As noted above, all families selected for the EHSRE study met eligibility requirements for Early Head Start services. However, because the programs were only capable of serving approximately half of these families, at the beginning of the study, families were randomly divided into a program group (i.e., families who were enrolled in the Early Head Start Program) and a control group (i.e., families who were not allowed to receive Early Head Start services until their child was three years old, at which point the child could be enrolled in a Head Start Program). Because preliminary investigations of the entire EHSRE data set used in this study revealed that children in the program group

exhibited fewer problem behaviors in pre-Kindergarten than children in the control group (Administration for Children and Families, 2006), the current study will control for program group in both models.

Gender. The gender of the target child was obtained when the child was 14 months old, via parent interview, and will be controlled for in the current study.

Analyses

Software Package

MPLUS 6 is a software package designed to analyze longitudinal, cross-sectional, and single time point data, as well as multilevel and single level data. Both latent growth curve analyses and structural equation modeling (SEM) were conducted using this software, as it possesses the ability to create structural equation models from the latent intercepts and slopes of latent growth curve analyses. MPLUS 6 was also chosen for its ability to handle a variety of variable types, as well as missing data (Muthén & Muthén, 2010).

Missing Data

In the current study, Full Information Maximum Likelihood (FIML), an MPLUS 6 function for handling missing data, was utilized to handle any missing data for predictor, control, and mediator variables (e.g., missing poverty data; Muthén & Muthén, 2010). Using this technique, MPLUS 6 can make use of all data, even if cases are missing some data points, while simultaneously performing growth curve analyses (Duncan, Duncan, & Strycker, 2006).

Preliminary Analyses

Before beginning latent growth curve and SEM analyses, all data were checked to ensure that the assumptions for running such analyses were met (e.g., scatter plots were used

to examine outliers). If the assumptions were not met, proper procedures (e.g., data transformation techniques) were used to comply with the expectations when possible.

Latent Growth Curve Analysis. Latent growth curves allow for examination of individual trajectories on an observed measure, using different data points over time (Bongers, Koot, van der Ende, & Verhulst, 2003). Based on this trajectory, intercept (i.e., the initial level on the measurement) and slope (i.e., the change over time on the measurement) latent variables are defined (Byrne & Crombie, 2003). For example, in the current study, the intercept is the initial score on the CBCL externalizing scale, which was obtained at 24 months. The change in this score over time (or over the course of the subsequent measurements) represents the slope. Latent growth curves were run to determine the intercepts and slopes of the child externalizing behavior measure and the parent-child relationship quality measure.

Structural Equation Model Analysis. SEM is used to test and estimate associations among variables (Sanchez, Budtz-Jorgensen, Ryan, & Hu, 2005). In the current study, an SEM framework was utilized to determine the relations among the intercepts and slopes found in the growth curve analyses. Willett and Sayer (1994) found that accommodating LGA within the SEM framework provides a straightforward method to analyze the associations among individual trajectories over time. They suggest that a relationship is systematic when the covariance between the latent estimates (e.g., slope and intercept) and other variables is significant. In the current study, significant latent estimates were utilized in an SEM model.

Fit Indices

Fit indices indicate whether or not a model “fits” the data well. In other words, it answers the question, “Are the parameter estimates of the model as similar as possible to the parameters of the data?” The similarity or dissimilarity of the model’s estimated parameters and the data’s parameters is expressed as a fit index. The more similar the two are, the more “acceptable” the model (Hayduk, Cummings, Boadu, Pazderka-Robinson, & Boulianne, 2007). It is generally recommended that researchers report the χ^2 fit indices and p -values whenever evaluating structural equation models (Hayduk et al.); however, it should not be the only fit index reported, as it is affected by sample size and can lead to both Type I and Type II errors (Hooper, Coughlan, & Mullen, 2008). Models are considered to be a “good fit” when the χ^2 p -value is greater than .05 (Barrett, 2005).

Other fit indices frequently reported are the comparative fit index (CFI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). For the current study, the χ^2 , CFI, RMSEA, and SRMR all are reported, as research suggests that this combination gives the analyses more strength in combatting misspecification (Hooper et al.; Hu & Bentler). CFI values range from 0 to 1, with higher values indicating better fit. A model is considered to have an acceptable fit if the CFI is above .90 (Hu & Bentler). Both the RMSEA and SRMR values range from 0 to 1, with small values indicating better fit. For the RMSEA, values less than .05 indicate a close fit between the parameter estimates and the data parameters (Browne & Cudeck, 1993; Hu & Bentler), values ranging from .05 to .08 suggest a fair fit (Browne & Cudeck), and values between .08 and .1 indicate a poor fit (MacCallum,

Browne, & Sugawara, 1996). For the SRMR, values less than .08 suggest a model fit that is acceptable, while values less than .05 indicate a good fit (Hooper et al.).

Research Questions

1. How do the level of externalizing behaviors at 24 months and the change in externalizing behaviors from 24 months to 5th grade differ across language acculturation groups?
 - a. It is hypothesized that children from English speaking homes will be rated as exhibiting the most problem behaviors at 24 months old, followed by children from Spanish speaking homes where children acquired English language skills before their parents, and finally, children from Spanish speaking homes where both parents and children acquired English language skills at approximately the same time will be rated as exhibiting the fewest externalizing behaviors at 24 months.
 - b. It is hypothesized that children from English speaking homes will decrease in externalizing behaviors from 24 months to 5th grade at the fastest rate, followed by children from Spanish speaking homes where both parents and children began speaking English at approximately the same time, and finally, children from Spanish speaking homes where children began speaking English before the parents will decrease at the slowest rate.
2. After controlling for poverty, program group, and child gender, how do the level of internalizing behaviors at 5th grade, the level of externalizing behaviors at the 24 month time point, and the change in externalizing behaviors from 24 months to 5th grade differ across language acculturation groups?

- a. It is hypothesized that children from English speaking homes will be rated as exhibiting the most problem behaviors at 24 months old, followed by children from Spanish speaking homes where children acquired English language skills before their parents, and finally, children from Spanish speaking homes where both parents and children acquired English language skills at approximately the same time will be rated as exhibiting the fewest externalizing behaviors at 24 months.
 - b. It is hypothesized that children from English speaking homes will decrease in externalizing behaviors from 24 months to 5th grade at the fastest rate, followed by children from Spanish speaking homes where both parents and children began speaking English at approximately the same time, and finally, children from Spanish speaking homes where children began speaking English before the parents will decrease at the slowest rate.
 - c. It is hypothesized that children from Spanish speaking homes where the child acquired English language skills before the parent will be rated as exhibiting the most internalizing behaviors at 5th grade, followed by children from Spanish speaking homes where both parents and children acquired English language skills at approximately the same time, and finally, children from English speaking homes will be rated as exhibiting the fewest internalizing behaviors at 5th grade.
3. How do the level of parental warmth at 36 months and the change in parental warmth from 36 months to 5th grade differ across language acculturation groups?

- a. It is hypothesized that the English only group (participants from English speaking homes) and the Spanish concurrent group (participants from Spanish speaking homes, where the parent and child began assessments in English at approximately the same time) will exhibit approximately the same levels of parental warmth at 36 months, yet the Spanish non-concurrent group (participants from Spanish speaking homes, where the child began completing assessments in English before the parent did so) will exhibit levels of parental warmth lower than that of the other two groups.
 - b. It is also hypothesized that parental warmth levels of participants from English speaking homes and from Spanish speaking homes where both the parent and child acquired English language skills at approximately the same time will remain consistent from 36 months to 5th grade. Finally, the level of parental warmth for participants from Spanish speaking homes where children acquired English language skills before parents will decrease from 36 months to 5th grade.
4. In each of the language groups, how do the initial level of parental warmth at 36 months and changes in parental warmth from 36 months to 5th grade affect the changes in externalizing behavior from 24 months to 5th grade and the level of internalizing behaviors at 5th grade?
 - a. It is hypothesized that the rate of change in parental warmth from 36 months to 5th grade will account for a significant amount of variance in the rate of change of externalizing behaviors from 24 months to 5th grade, and a

significant amount of variance in internalizing behaviors at 5th grade for all language acculturation groups

CHAPTER 4: RESULTS

Descriptive Statistics

Descriptive statistics were calculated for all variables used in the current study. Information regarding the control variables can be found in Table 2, while the means, standard deviations, minimum and maximum values, and missing values for parental warmth and problem behavior variables can be found in Table 3, and a correlation matrix of all variables can be found in Table 4.

Analysis of Research Questions

Research Question 1: How do the level of externalizing behaviors at 24 months and the change in externalizing behaviors from 24 months to 5th grade differ across language acculturation groups?

Using MPLUS, a latent growth curve was constructed for externalizing behaviors for each language group from the 24 month, 36 month, pre-Kindergarten, and 5th grade CBCL data (see Figures 1 through 4). Because participants were only included if they had complete CBCL data for all four time points, FIML was not used in this growth curve. However, the grouping function on MPLUS was utilized to separately determine the intercept and slope of each language acculturation group (see Figure 1 through 4). The fit indices for the growth curve model for externalizing behaviors were $\chi^2 = 30.49$ ($p < .05$), CFI = .912, RMSEA = .128, SRMR = .99. The CFI indicates that this model is a good fit for the data, but the RMSEA and SRMR indicate that the model is weak. Because several significant parameter estimates were found in all groups, the model was used in further analyses. This model had a χ^2 value of 30.49 with 15 degrees of freedom. A model that constrained the slope and intercept in each group was also analyzed. This is done to determine whether or not the

intercept and slope scores among groups are significantly different from one another. This model had a χ^2 value of 46.058 with 19 degrees of freedom. The χ^2 difference between models was 15.568 with 4 degrees of freedom. This test outcome is significant, which indicates that the observed differences among groups on externalizing behavior intercepts and slopes are significantly different from one another.

The results for the English only group (participants from English speaking homes) are illustrated in Figures 1 and 4. For this group, a significant mean estimate for the initial level of externalizing behaviors at 24 months old was found, and the estimate for the slope term was negative and significant. This means that children exhibited fewer externalizing behaviors as they got older. Significant variances in intercept and slope of the externalizing behaviors exhibited by children were also observed. This signifies that as children got older, parents reported varying levels of externalizing behaviors and varying rates of change in externalizing behaviors. The initial level and rate of change of externalizing behaviors were negatively correlated, indicating that a higher incidence of externalizing behaviors at 24 months old was associated with lower rates of change in these behaviors over time. Given the significant intercept and slope, as well as the significant variance in intercept and slope, the model is appropriate for further analysis using the latent growth curve within a structural equation model (see Figure 1).

The results for the Spanish concurrent group (participants from Spanish speaking homes, where both the parent and child began assessments in English at approximately the same time) are illustrated in Figures 2 and 4. For this group, a significant mean estimate for the initial level of externalizing behaviors at 24 months old was found, and the estimate for the slope term was negative and significant. This signifies that children exhibited fewer

externalizing behaviors as they got older. A significant variance in intercept was found, indicating that parents reported varying levels of externalizing behaviors at 24 months old. The initial level and rate of change in externalizing behaviors were not significantly correlated. Given the significant intercept and slope, as well as the significant variance in intercept, the model is appropriate for further analysis using the latent growth curve within a structural equation model (see Figure 2).

The results for the Spanish non-concurrent group (participants from Spanish speaking homes, where the child began assessments in English before the parent) are illustrated in Figures 3 and 4. For this group, a significant mean estimate for the initial level of externalizing behaviors at 24 months old was found, and the estimate for the slope term was negative and significant. This indicates that children exhibited fewer externalizing behaviors as they got older. A significant variance in intercept was also found, signifying parents reported varying levels of externalizing behaviors at the 24 month time point. The initial level and rate of change of externalizing behaviors were negatively correlated), indicating that a higher incidence of externalizing behaviors at 24 months old was associated with lower rates of change in these behaviors over time. Given the significant intercept and slope, as well as the significant variance in intercept, the model is appropriate for further analysis using the latent growth curve within a structural equation model (see Figure 3).

Overall, children in the English only group had an average externalizing behaviors score of .359 (15.80 points out of 44) at 24 months old, the Spanish concurrent group had an average externalizing behaviors score of .294 (12.94 points out of 44), and the Spanish non-concurrent group had an average externalizing behaviors score of .338 (14.87 points out of 44). In regard to the change in externalizing behaviors from 24 months to 5th grade, children

in the English only group decreased at a rate of -.024, children in the Spanish concurrent group decreased at a rate of -.023, and children in the Spanish non-concurrent group decreased at a rate of -.025 (see Figure 4). Analyses revealed that these intercept and slope differences are significant, both because they did not occur by chance, and because each group's slope was significantly different from the other groups' slopes.

Research Question 2: After controlling for poverty, program group, and child gender, how do the level of internalizing behaviors at 5th grade, the level of externalizing behaviors at the 24 month time point, and the change in externalizing behaviors from 24 months to 5th grade differ across language acculturation groups?

Research question 2 was answered by utilizing the grouping function on MPLUS to create latent growth curve models for externalizing behaviors (measured by the CBCL at the 24 month, 36 month, pre-Kindergarten, and 5th grade measurement time points) for each of the language acculturation groups, and using the intercept and slope as variables in a structural equation model (see Figures 4 through 8). For each group, the externalizing intercept and slope, as well as the internalizing intercept at 5th grade, were regressed on each of the control variables. The fit indices for the model were $\chi^2 = 45.992$ ($p = .205$), CFI = .973, RMSEA = .057, and SRMR = .064. These fit indices indicate that the model is a good fit for the data. This model had a χ^2 value of 45.992 with 39 degrees of freedom. A model that constrained the slope and intercept of externalizing behaviors in each group was also analyzed. It had a χ^2 value of 51.736 with 43 degrees of freedom. The χ^2 difference between models was 5.744 with 4 degrees of freedom. This was not significant, which indicated that the observed differences in groups on externalizing behaviors were not significantly different from one another. Similarly, a model that constrained the intercept of internalizing behaviors

at 5th grade in each group was analyzed. It had a χ^2 value of 46.011 with 41 degrees of freedom. The χ^2 difference between models was .019 with 2 degrees of freedom. This was not significant, indicating that the observed differences between groups on internalizing behaviors at 5th grade were not significant.

The results for the English only group (participants from English speaking homes) are illustrated in Figures 5 and 8. For this group, none of the control variables accounted for a significant amount of variance in the latent intercepts and slopes. A significant mean estimate for the initial level of externalizing behaviors at 24 months old was found, as well as for the level of internalizing behaviors at 5th grade. The estimate for the externalizing behaviors slope term was negative and significant, indicating that children exhibited fewer externalizing behavior as they got older. The initial level and rate of change of externalizing behaviors were negatively correlated, signifying that a higher incidence of externalizing behaviors at 24 months old was associated with lower rates of change in these behaviors over time (see Figure 5).

The results for the Spanish concurrent group (participants from Spanish speaking homes, where the parent and child began assessments in English at approximately the same time) are illustrated in Figures 6 and 8. For this group, none of the control variables accounted for a significant amount of variance in the latent intercepts and slopes. A significant mean estimate for the initial level of externalizing behaviors at 24 months old was found, as well as for the level of internalizing behaviors at 5th grade. The estimate for the slope term was negative and significant, indicating that children exhibited fewer externalizing behavior as they got older. The initial level and rate of change of externalizing behaviors were negatively correlated, signifying that a higher incidence of externalizing

behaviors at 24 months old was associated with lower rates of change in these behaviors over time (see Figure 6).

The results for the Spanish non-concurrent group (participants from Spanish speaking homes, where the child began assessments in English before the parent) are illustrated in Figures 7 and 8. For this group, none of the control variables accounted for a significant amount of variance in the latent intercepts and slopes. A significant mean estimate for the initial level of externalizing behaviors at 24 months old was found, as well as for the level of internalizing behaviors at 5th grade. The estimate for the slope term was negative and significant, indicating that children exhibited fewer externalizing behavior as they got older. The initial level and rate of change of externalizing behaviors were negatively correlated, signifying that a higher incidence of externalizing behaviors at 24 months old was associated with lower rates of change in these behaviors over time (see Figure 7).

Overall, with the control variables factored into the model, children in the English only group had a mean externalizing behaviors score at 24 months old of .354 (15.58 points out of 44), children in the Spanish concurrent group had a mean score of .268 (11.79 points out of 44), and children in the Spanish non-concurrent group had a means score of .272 (11.97 points out of 44). Children in the English only group had an average internalizing score at 5th grade of .082 (5.28 points out of 64), while children in the Spanish concurrent group had an average score of .077 (4.93 points out of 64), and finally, children in the Spanish non-concurrent group had an average score of .078 (4.99 points out of 64). Last, children from the English only group had an average slope of -.022, children in the Spanish concurrent group had an average slope of -.026, and children in the Spanish non-concurrent group had an average slope of -.023 (see Figure 8). These intercepts and slope findings were

statistically significant because they did not occur by chance, yet the differences among groups were not significant.

Research Question 3: How do the level of parental warmth at 36 months and the change in parental warmth from 36 months to 5th grade differ across language acculturation groups?

In MPLUS, a latent growth curve was constructed for parental warmth using the 36 month, pre-Kindergarten, and 5th grade CBCL data. The maximum likelihood estimation feature of MPLUS was used to handle any missing values. The grouping function on MPLUS was utilized to determine separately the intercept and slope of each language acculturation group (see Figures 9 through 11). The fit indices for the growth curve model for parental warmth were $\chi^2 = 5.750$ ($p = .124$), CFI = .520, RMSEA = .134, and SRMR = .046. Because the fit indices indicate a poor fitting model, the model fit for each individual language acculturation group was analyzed separately. Results revealed that the model fit indices for language acculturation The Spanish concurrent group (participants from Spanish speaking homes, where parents and children began competing assessments in English at approximately the same time) were $\chi^2 = 5.132$ ($p = .024$), CFI = .000, RMSEA = .354, and SRMR = .090. Because the fit for this language group was so poor, it was not included in further analyses. Instead, a model including only the English only group and the Spanish non-concurrent group was analyzed. The fit indices for this model were $\chi^2 = .618$ ($p = .734$), CFI = >.999, RMSEA < .001, and SRMR = .021. This model fits the data very well, and further analyses (e.g., research question 4) were conducted. This model had a χ^2 value of .618 with 2 degrees of freedom. A model that constrained the slope and intercept in each group was also analyzed. This model had a χ^2 value of 46.058 with 19 degrees of freedom. The χ^2 difference

between models was 3.845 with 2 degrees of freedom. This is not significant, which indicates that the observed differences in groups are not significantly different from one another.

The results for The English only group (participants from English speaking homes) are summarized in Figures 9 and 11. For this group, a significant mean estimate for the initial level of parental warmth at 36 months old was found. The estimate for the slope term was negative and significant, indicating that parents exhibited less warmth as children got older. A significant variance in the intercept was found, but not in the slope of parental warmth. This signifies that parents were observed exhibiting different levels of warmth at 36 months old. The initial level and rate of change of externalizing behaviors were not significantly correlated. Given the good model fit, the significant intercept and slope, and the significant variance in intercept, the model is appropriate for further analysis using the latent growth curve within a structural equation model (see Figure 9).

The results for the Spanish non-concurrent group (participants from Spanish speaking homes, where children began completing assessments in English before parents) are summarized in Figures 10 and 11. For this group, a significant mean estimate for the initial level of parental warmth at 36 months old was found. The estimate for the slope term was negative and significant, indicating that parents exhibited less warmth as children got older. The variances in intercept and slope were not significant. The initial level and rate of change in parental warmth were not significantly correlated. Given the good model fit and the significant intercept and slope, the model is appropriate for further analysis using the latent growth curve within a structural equation model (see Figure 10).

Overall, for participants in the English only group, the mean parental warmth score at 36 months was 4.61, and for the Spanish non-concurrent group, it was 4.81. For the English

only group, the slope of parental warmth from 36 months to 5th grade was $-.082$, and for the Spanish non-concurrent group, it was $-.081$. These data indicate that participants in the English only group exhibited lower levels of parental warmth at 36 months, and decreased in parental warmth from 36 months to 5th grade at a faster rate than participants in the Spanish non-concurrent group; however, these differences were very minimal ($.2$ for the intercept, and $.001$ for the slope; see Figure 11). The intercepts and slopes of parental warmth were statistically significant for both groups because they did not occur by chance, but the difference between language groups was not statistically significant.

Research Question 4: In each of the language groups, how do the initial level of parental warmth at 36 months and changes in parental warmth from 36 months to 5th grade affect the initial level of externalizing behaviors at 24 months, changes in externalizing behavior from 24 months to 5th grade, and the level of internalizing behaviors at 5th grade?

Research question 4 was answered by utilizing the grouping function on MPLUS to create latent growth curve models for externalizing behaviors (measured by the CBCL at the 24 month, 36 month, pre-Kindergarten, and 5th grade measurement time points) and parental warmth (measured by the HOME at the 36 months, pre-Kindergarten, and 5th grade measurement time point) for language acculturation Groups 1 and 3, and using the intercepts and slopes from these growth curves as variables in a structural equation model (see Figures 12 and 13). Maximum likelihood estimation was used to compute missing values. Because the parental warmth univariate growth curve was a very poor fit for the Spanish concurrent group data, only the English only and the Spanish non-concurrent groups were analyzed in this final research question.

The results for the English only group (participants from English speaking homes) are summarized in Figure 12. The fit indices for this model were $\chi^2 = 28.815$ ($p = .475$), CFI > .999, RMSEA < .001, and SRMR = .078. These indices indicate that the model is a very good fit for the data. A significant, negative correlation was found between the warmth intercept and slope, indicating that the higher the parental warmth at 36 months, the more gradual the decrease in parental warmth between 36 months and 5th grade, and the lower the parental warmth at 36 months, the more rapid the decrease in parental warmth between 36 months and 5th grade. There was also a significant, negative correlation between the externalizing intercept and slope, indicating that the higher the externalizing scores at 24 months, the more gradual the decrease in externalizing scores from 24 months to 5th grade, and the lower the externalizing scores at 24 months, the more rapid the decrease in externalizing scores from 24 months to 5th grade. Finally, there was a significant, positive correlation between internalizing scores at 5th grade, and the slope of externalizing scores, indicating that the more gradual the decrease in externalizing behaviors from 24 months to 5th grade, the lower the internalizing score at 5th grade, and the more rapid the decrease in externalizing scores from 24 months to 5th grade, the higher the internalizing score at 5th grade. There was no significant correlation between the level of externalizing behaviors at 24 months and the level of parental warmth at 36 months. The level of parental warmth at 36 months, and the change in parental warmth between 36 months and 5th grade did not account for a significant amount of variance in the initial level of externalizing behaviors at 24 months or the initial level of internalizing behaviors at 5th grade, nor did it account for a significant amount of variance in the rate of change of externalizing behaviors from 36

months to 5th grade (see Figure 12). Because parental warmth did not have any significant effects on problem behaviors, χ^2 comparisons were not made between groups.

The results for the Spanish non-concurrent group (children from Spanish speaking homes, where children began completing assessments in English before parents) are summarized in Figure 13. The fit indices for this model were $\chi^2 = 38.978$ ($p = .126$), CFI = .934, RMSEA = .066, and SRMR = .070 (see Figure 10). These indices indicate that the model is a good fit for the data. A significant, negative correlation between the externalizing intercept and slope indicates that the higher the externalizing scores at 24 months, the more gradual the decrease in externalizing scores from 24 months to 5th grade, and the lower the externalizing scores at 24 months, the more rapid the decrease in externalizing scores from 24 months to 5th grade. There was also a significant, positive correlation between internalizing scores at 5th grade, and the externalizing scores at 24 months, indicating that the lower the externalizing score at 24 months, the lower the internalizing score at 5th grade, and the higher the externalizing scores at 24 months, the higher the internalizing scores at 5th grade. There was no significant correlation between the level of externalizing behaviors at 24 months and the level of parental warmth at 36 months, nor between the level of parental warmth at 36 months and the level of internalizing behaviors at 5th grade. Finally, the level of parental warmth at 36 months, and the change in parental warmth between 36 months and 5th grade did not account for a significant amount of variance in the initial level of externalizing behaviors at 24 months or the rate of change of externalizing behaviors from 36 months to 5th grade (see Figure 13). Because parental warmth did not have any affect on problem behaviors, χ^2 comparisons were not made between groups.

CHAPTER 5: DISCUSSION

Discussion

This study examined the difference in the initial level of externalizing behaviors at 24 months, the change in externalizing behaviors from 24 months to 5th grade, and the internalizing behaviors at 5th grade for each of the language acculturation groups. It also investigated the difference in initial level of parental warmth at 36 months, the change in parental warmth from 36 months to 5th grade, and the effect that parental warmth has on externalizing and internalizing behaviors for each language acculturation group.

Externalizing Behaviors at 24 months Old

When no control variables were included in the model, children in the English only group exhibited the most problem behaviors at 24 months old, followed by children in the Spanish concurrent group. Out of 44 points, there was a difference of approximately 1 point between these two groups. Children in the Spanish non-concurrent group exhibited the lowest level of externalizing behaviors at 24 months old. Out of 44 points, these children scored approximately 3 points lower than the English only group, and approximately 2 points lower than the Spanish concurrent group. When the effects of poverty, program group, and child gender on the initial scores of externalizing behaviors at 24 months old were accounted for, children in the English only group still exhibited the most problem behaviors, followed by the Spanish non-concurrent group, and finally, the Spanish concurrent group. On average, the English only group scored approximately 4 points higher than the Spanish non-concurrent group, and the Spanish non-concurrent group scored on average less than one half of a point higher than the Spanish concurrent group.

Although poverty, program group, and child's gender have been shown to affect externalizing behaviors (Administration for Children and Families, 2006; Dearing, McCartney, & Taylor, 2006; Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003; Kramer, Krueger, & Hicks, 2008; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999), they did not account for a significant amount of variance in ratings of externalizing behaviors at 24 months old for any of the language acculturation groups. For each language acculturation group, the mean score of externalizing behaviors at 24 months old after controlling for poverty, program group, and child's gender was statistically significant, indicating that these scores did not occur by chance. However, the differences among language acculturation groups were not significant. Taken together, these data demonstrate that once other factors that affect externalizing behaviors are accounted for, there are not significant differences between language acculturation groups on parental ratings of externalizing behaviors at 24 months old.

Researchers have shown that children not yet in school (approximately four years and younger) who come from Spanish speaking homes are rated more positively on measures of externalizing behaviors than their English speaking peers (Luchtel et al., 2010). Also, children who maintain their home language are better able to maintain communication with parents, and have a stronger sense of identity (Fillmore, 1991), which has been linked to the display of fewer problem behaviors (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Dawson & Williams, 2008). Based on these findings, it was hypothesized that children from English speaking homes would be rated as exhibiting the most problem behaviors at 24 months old. Also, children from Spanish speaking homes where both parents and children acquired English language skills at approximately the same time would be rated as exhibiting

the fewest externalizing behaviors at 24 months. Finally, children from Spanish speaking homes where children acquired English language skills before their parents would be rated somewhere between the two previous groups,

The current study provided support for these research findings and hypotheses. Analyses revealed that at 24 months old, children who are Hispanic from Spanish speaking homes were rated as exhibiting fewer problem behaviors than their English speaking counterparts. Also, children from Spanish speaking homes where the child acquired English before the parent were rated as exhibiting more problem behaviors than children from Spanish speaking homes where both the parent and child acquired English language skills at approximately the same time. After controlling for poverty, program group, and child gender, these differences in exhibition of problem behaviors still existed, but they were no longer significant. Although these differences were significant in the univariate growth curve model, they did not remain significant after controlling for poverty, program group, and child gender.

These findings are important because they provide some support for the research conducted by Luchtel and colleagues (2010), which found that teachers rated children from Spanish speaking homes as exhibiting fewer problem behaviors than children from English speaking homes. In that study, it was hypothesized that teachers rated children from Spanish speaking homes more positively because they were in the nonverbal period of the language acquisition stages. The current study expands on this research by examining parent ratings of externalizing behaviors prior to entry into school.

Parents in this study rated children similar to teachers did in the study by Luchtel and colleagues (2010) study, giving more positive ratings to children from Spanish speaking

homes, and more negative ratings to children from English speaking homes. Because of this, the language hypothesis presented by Luchtel and colleagues is not supported by the current study. If the ratings of teachers were a result of children being in the non-verbal stage of English language acquisition, it would not make sense that parent ratings matched those of teachers. When children are at home, they are speaking their home language, and are not progressing through these second language acquisition stages. Perhaps these positive behavior ratings of Spanish speaking children prior to school entry are a result of child rearing practices, parental expectations, or parental perceptions of behaviors that constitute “problem behaviors.” It is recommended that future research examine the factors affecting this positive behavior rating of pre-Kindergarten Spanish speaking children. Knowing these factors can help promote positive behavioral development in all children.

The Change in Externalizing Behaviors from 24 months to 5th Grade

Next, the change in externalizing behaviors (i.e., slope) from 24 months to 5th grade was investigated. The mean slope for all language acculturation groups was negative, indicating that children exhibited fewer problem behaviors as they got older, which is consistent with previous research (Bongers, Koot, van der Ende, & Verhulst, 2003; Lahey et al., 2000). When looking at each of the different language acculturation groups without control variables, children in the Spanish non-concurrent group decreased in problem behaviors at the most rapid rate, followed by children in the Spanish concurrent group, and finally, children in the English only group, who decreased at the most gradual rate. After adding control variables into the model, children in the Spanish concurrent group decreased in externalizing behaviors at the most rapid rate, followed by children in the Spanish non-

concurrent group, and finally, children in the English only group, who decreased at the most gradual rate.

Once again, although research has found that poverty, program group, and child gender have an effect on problem behaviors (Administration for Children and Families, 2006; Dearing, McCartney, & Taylor, 2006; Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003; Kramer, Krueger, & Hicks, 2008; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999), these results were not found in the current study. The differences in externalizing slope scores among the language acculturation groups were significant because they did not occur by chance. However, after factoring in the effects of control variables, these differences between groups were not significant, nor were they meaningful due to their small magnitude.

The work of Wong Fillmore (1991) suggests that when children from Spanish speaking homes gain proficiency in English before their parents, a disconnect between parents and children is created. As a result, children and parents can lose the ability to communicate, and children may struggle to identify with a culture (Fillmore, 2000). When parent-child interactions are limited and of poor quality, it can lead to an increase in problem behaviors among their children (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Frye & Garber, 2005). Dinh and colleagues (2002) also found that parental involvement mediated the relationship between acculturation and externalizing behaviors. Higher levels of acculturation led to lower levels of parental involvement, which in turn led to more problem behaviors.

Children in the Spanish concurrent group became proficient in English at approximately the same time their parents did. Because of this, one would expect that they were able maintain communication and high quality parent-child interactions. However,

children in the Spanish non-concurrent group became proficient in English before their parents. Therefore, it is more likely that this group of children experienced a disconnect in communication with parents, and in turn, lower quality parent-child interactions. Based on this research and the language acculturation grouping used in the current study, it was hypothesized that externalizing behaviors from 24 months to 5th grade would decrease at a faster rate for children in the English only group and the Spanish concurrent group than children in the Spanish non-concurrent group. However, results revealed that there were no meaningful differences among language acculturation groups in the rate of change of externalizing behaviors. Therefore, the hypothesis was not supported, and the findings were not supportive of the research cited above.

Instead, the findings of Vega and colleagues (1995) were supported by the current study. Vega and colleagues found that for U.S. born children who are Hispanic, parental ratings of problem behaviors were not affected by language acculturation. Vega's study notes the importance of investigating the factors affecting these findings, although it does not expound on them. The current study also found that language acculturation did not have a significant effect on parental ratings of problem behaviors. Although the factors affecting this relationship cannot be concluded from the current study, perhaps these positive ratings of U.S. born children who are Hispanic are a result of generational status. It is possible that the parents of U.S. born children who are Hispanic are more acculturated to the U.S., and view problem behaviors differently than Hispanics who are less acculturated to the U.S.

Like Vega noted, the factors affecting the results found in these studies should be investigated in future research, as understanding the factors that affect problem behaviors could lead to interventions that increase positive peer relationships (McArdle, O'Brien,

Macmillan, & Kolvin, 2000; Reijntjes, Kamphuis, Prinzie, & Telch, 2009; Wood, Cowan, & Baker, 2000), academic achievement (Breslau, 2009; Masten et al., 2005; Steinberg, 1996; Vitaro, Larocque, Janosz, & Tremblay, 2001), and resistance to substance use and abuse (Clark & Neighbors, 1996; King, Iacono, & McGue, 2004).

Internalizing Behaviors at 5th Grade

The current study examined the differences in the display of internalizing behaviors at 5th grade among language acculturation groups, after controlling for poverty, program group, and child's gender. Children in the English only group exhibited the most internalizing behaviors, followed by children in the Spanish non-concurrent group, and finally, children in the Spanish concurrent group, who exhibited the fewest problem behaviors; however, these differences among groups were very minimal (.035 points out of 70). These data were significant, meaning they did not occur by chance, but the differences among groups were not significant, nor were they meaningful due to their small magnitude.

Again, the work of Fillmore (1991, 2000), and the findings by Dinh and colleagues (2002) ascertained that when children learn English prior to their parents possessing the ability to speak English, there is a breakdown in communication between the two, a decrease in the quality of parent-child interactions, and a higher number of problem behaviors exhibited by children. Based on these findings, it was hypothesized that children from Spanish speaking homes where the child acquired English language skills before the parent would be rated as exhibiting the most internalizing behaviors at 5th grade, followed by children from Spanish speaking homes where both parents and children acquired English language skills at approximately the same time, and finally, children from English speaking homes would be rated as exhibiting the fewest internalizing behaviors at 5th grade. Instead, no

significant differences were found among language acculturation groups on the ratings of internalizing behaviors at 5th grade. Perhaps no differences were found because by 5th grade, children are learning behaviors from peers, teachers, and other school personnel, and the language acculturation status of parents and children does not have a significant effect on child behaviors.

Parental Warmth

Next, language acculturation group differences in parental warmth at 36 months old, and the rate of change in parental warmth from 36 months to 5th grade were investigated. Because the growth curve model was a very poor fit for the Spanish concurrent group (likely due to the very small sample size of 34), only the English only and Spanish non-concurrent groups were included in these analyses. The initial level of warmth at 36 months old for the Spanish non-concurrent group was slightly higher than that of the English only group. Similarly, the Spanish non-concurrent group decreased in parental warmth at a slightly more gradual rate from 36 months to 5th grade than did the English only group. The intercepts and slopes of parental warmth were statistically significant for both groups because they did not occur by chance, but the difference between language groups was not meaningful or statistically significant.

Because research suggests that when children begin speaking English before their parents, a disconnect is created (Fillmore, 1991), and the quality of parent-child interactions decreases (Dinh, Roosa, Tein, & Lopez, 2002; Fillmore, 2000), it was hypothesized that the Spanish non-concurrent group would exhibit lower levels of warmth than the English only group at 36 months, and that the Spanish non-concurrent group would decrease in parental

warmth from 36 months to 5th grade, while the English only group would remain constant. These hypotheses were not supported, as significant group differences were not yielded.

Effects of Parental Warmth on Problem Behaviors

Finally, the initial level of parental warmth at 36 months and the change in parental warmth from 36 months to 5th grade were investigated to determine their effects on the change in externalizing behaviors from 24 months to 5th grade and the level of internalizing behaviors at 5th grade. Again, because the latent growth curve model for parental warmth in the Spanish concurrent group was such a poor fit, the Spanish concurrent group was not included in these analyses.

Based on previous research findings that lower levels of parental warmth are associated with higher levels of problem behaviors (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Caron, Weiss, Harris, & Catron, 2006; Dinh, Roosa, Tein, & Lopez, 2002; Fillmore, 2000; McKee, Colletti, Rakow, Jones, & Forehand, 2008), it was hypothesized that the rate of change in parental warmth from 36 months to 5th grade would account for a significant amount of variance in the rate of change of externalizing behaviors from 24 months to 5th grade, and a significant amount of variance in internalizing behaviors at 5th grade for all language acculturation groups. However, results revealed that parental warmth did not account for a significant amount of variance in problem behaviors in either language acculturation group.

Summary

Research investigating the effects of language acculturation on problem behaviors is mixed. The results vary greatly depending on the rater (e.g., parent, teacher, or child) and the age of the child being studied. For teachers, pre-Kindergarten children from Spanish

speaking homes are rated more positively on measures of problem behaviors than their English speaking peers (Luchtel et al., 2010), yet in grade school, children with limited English proficiency are rated more negatively on measures of problem behaviors than their English proficient peers (Dinh, Roosa, Tein, & Lopez, 2002; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995). For parents, when a child becomes proficient in English prior to parents, most research suggests that it leads to parental ratings of increased behavior problems (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Dinh, Roosa, Tein, & Lopez, 2002; Fillmore, 2000; Vega, Khoury, Zimmerman, Gil, & Warheit); however, one study found that language acculturation differences did not affect parental ratings of behavior problems for U.S. born children (Vega, Khoury, Zimmerman, Gil, & Warheit). Finally, a study in which children rated themselves on problem behaviors found that parental involvement mediated the effect of language acculturation on problem behaviors. Higher levels of acculturation (indicated by being born in the United States and speaking more English) led to lower levels of parental involvement, which in turn led to more problem behaviors.

When taken as a whole, the current study indicates that the language acculturation differences between parents and children do not have a significant effect on externalizing and internalizing behavior ratings of parents. Although this information contradicts some research findings, which indicate that language acculturation conflicts lead to more negative parental ratings of behavior problems (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Dinh, Roosa, Tein, & Lopez, 2002; Fillmore, 2000), it supports the work of Vega and colleagues (1995). Vega found that for U.S. born children who are Hispanic, language acculturation conflicts (e.g., difficulties getting along with others because participant does

not speak English well) had a significant effect on teacher ratings of problem behaviors, but not on parental ratings of these behaviors. Together, these studies show that language acculturation differentially impacts ratings of problem behaviors for children in the home environment than it does in the school environment. This is a logical finding when studying children from Spanish speaking homes who are attending schools where English is the primary language of instruction. Language acculturation will have differing impacts in these environments because a different language is spoken in each. The challenge for future researchers is to investigate factors affecting negative behavior ratings in each of these environments, and the interventions that can be implemented to achieve positive behavioral development in both the home and school environments.

The current study also indicates that the language acculturation differences between parents and children do not have a significant effect on parental warmth. Because parental warmth plays such an important role in child development (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Caron, Weiss, Harris, & Catron, 2006; McKee, Colletti, Rakow, Jones, & Forehand, 2008), these findings are very encouraging. As children in the current study progressed through school, regardless of the language acculturation status of the parents and children, parents maintained a consistent level of warmth toward their child, and they did not view their child's behaviors differently as a result of language acculturation. The fact that displays of parental warmth remained consistent is very exciting, as these parenting behaviors will likely lead to more positive social development for the children. Although these findings contradict those of Wong Fillmore (1991), which suggest that a disconnect between parents and children is created as a result of language acculturation differences, they demonstrate a consistency in parental warmth, regardless of language differences. Perhaps

when there are language acculturation differences between parents and children, parents work even harder to show their children more warmth, as a means of communicating love, affection, and support, and this additional support has a positive effect on social development.

Overall, more studies investigating the effects of language acculturation on problem behaviors, and the factors impacting this association, are needed to fully understand the relation between these two constructs. Up to this point, the limited research that has investigated this relationship has used different measures of language acculturation, different raters of problem behaviors, and different ages of children. Research investigating the effects of each of these elements would clarify the relationship between language acculturation and the display of problem behaviors.

Limitations

Several of the findings in this study were not statistically significant, possibly as a result of the limitations of the study. First, the sample size used in the current study was very small ($n = 163$), and the sample size for each language acculturation group was even smaller ($n = 34$ to $n = 68$). When performing growth curve analyses, larger sample sizes are more likely to yield robust findings (Duncan, Duncan, & Strycker, 2006). The small sample size likely contributed to poor fit of the parental warmth growth curve model for the Spanish concurrent group (research question 3), and it also likely contributed to the non-statistically significant findings in the final research question (i.e., research question 4). Second, English language skills of children and parents were not measured directly. Instead, it was only known whether they completed assessments or interviews in English or Spanish. The proficiency with which participants spoke both English and Spanish could have had a drastic

impact on the communication between participants (Fillmore, 1991) and quality of parent-child interactions (Dinh, Roosa, Tein, & Lopez, 2002; Fillmore, 2000).

Third, no data were collected between pre-Kindergarten and 5th grade. The language acculturation for both parents and children was not accounted for during this time. This information is incredibly important as all children are learning language skills prior to school, mastering these skills during the elementary years, and by 5th grade, most children have a strong command of language skills (Allen & Cowdery, 2009). Because this study lacks data from the elementary years, it is lacking data from the time period during which children progress from learning to speak, to mastering a language. These data could impact the results, and shed more light on the language development of children from diverse linguistic backgrounds. This lack of data between pre-Kindergarten and 5th grade also impacted the way in which participants were grouped. Because there were no data collected during this time, this information could not be used when compiling language acculturation groups. Again, this information could have a profound effect on the results of this study, and would likely shed more light on the impacts of language acculturation on problem behaviors and parent-child interactions.

Future Studies

Because previous research has made strong connections between language acculturation and problem behaviors (Dawson & Williams, 2008; Luchtel et al., 2010; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995), and the mediating role that parent-child relationship quality plays in this relationship (Brotman, Gouley, Chesir-Teran, Dennis, & Klein, 2005; Caron, Weiss, Harris, & Catron, 2006; Dinh, Roosa, Tein, & Lopez, 2002; Fillmore, 2000; McKee, Colletti, Rakow, Jones, & Forehand, 2008), it is recommended that

these relationships continue to be investigated. It is important that future studies carefully consider the operational definition of language acculturation, as several different measures have been used to define this construct (Dinh, Roosa, Tein, & Lopez, 2002; Hokoda, Galvan, Malcarne, Castaneda, & Ulloa, 2007; Vega, Khoury, Zimmerman, Gil, & Warheit, 1995), making it difficult to pinpoint the impact of language acculturation. Also, longitudinal studies will shed light on the effects of language acculturation on parent-child relationships and problem behaviors across time, and studies involving multiple raters (e.g., parent, teacher, child, observer), will help to understand the complexity of the relationships among these variables, as well as the effects of language acculturation on each of the child's relationships. This research is especially important as the reports of parents, teachers, and children have been mixed, and also vary greatly by the age of the child (Dawson & Williams, 2008; Dinh, Roosa, Tein, & Lopez, 2002, Lucht et al., 2010).

If the field can understand the factors that lead to positive ratings of problem behaviors in the early years, and the factors that contribute to changes in the display of problem behaviors for these children as they progress through school, interventions can be implemented to maintain and promote positive social skills and decrease problem behaviors. In doing so, children will be more likely to have positive peer relationships (McArdle, O'Brien, Macmillan, & Kolvin, 2000; Reijntjes, Kamphuis, Prinzie, & Telch, 2009; Wood, Cowan, & Baker, 2000), achieve in school (Breslau, 2009; Masten et al., 2005; Steinberg, 1996; Vitaro, Larocque, Janosz, & Tremblay, 2001), and resist substance use and abuse (Clark & Neighbors, 1996; King, Iacono, & McGue, 2004).

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Table 1

Demographic Characteristics of Study Participants

Variable	Baseline (%)	5th Grade (%)
Children		
Mean Age		10.56
Age Range		9 to 124 months
Caregivers		
Relationship to Child		
Mother	162 (99.4)	157 (96.3)
Other	1 (.6)	6 (3.7)
Age of Caregiver		
Mean Age	24.6	35.68
Range of Ages	14 to 46 years	25 to 56 years
Ethnicity of Caregiver		
Non-Hispanic White	13 (8.0)	
Hispanic		
Mexican	113 (69.3)	
Puerto Rican	9 (5.5)	
Cuban	1 (.6)	
Central American	11 (6.7)	
Other	4 (2.4)	

Table 1 (continued)

Variable	Baseline (%)	5th Grade (%)
Education of Caregiver		
< High School Completion	114 (69.9)	85 (52.1)
Diploma/GED	27 (16.6)	27 (16.6)
Some Post-Secondary	14 (8.6)	19 (11.7)
AA, Bachelor's, or Higher	8 (4.9)	19 (11.7)
Missing	10 (6.1)	6 (3.7)
Work Status of Caregiver		
Full Time	18 (11.0)	80 (49.1)
Part Time	19 (11.7)	30 (18.4)
Unemployed	116 (71.2)	53 (32.5)
Missing	10 (6.1)	0 (0.0)

Table 2

Control Variable Statistics by Group

Variable	The English only group (%) <i>n</i> = 61	The Spanish concurrent group (%) <i>n</i> = 34	The Spanish non- concurrent group (%) <i>n</i> = 68
Poverty Mean	1.1	1.0	1.5
Group			
Program	37 (60.7)	13 (38.2)	41 (60.3)
Control	24 (39.3)	21 (61.8)	27 (39.7)
Gender			
Male	38 (62.3)	15 (44.1)	40 (58.8)
Female	23 (37.7)	19 (55.9)	28 (41.2)

Table 3

Descriptive Statistics of Variables by Group

Variable	Mean	Standard Deviation	Min	Max	Missing
Externalizing Behaviors					
24 months					
English Only	.36	.19	.00	.82	0
Spanish Concurrent	.32	.15	.05	.80	0
Spanish Non-Concurrent	.33	.21	.00	.86	0
36 months					
English Only	.32	.18	.00	.89	0
Spanish Concurrent	.25	.12	.05	.52	0
Spanish Non-Concurrent	.29	.19	.00	.75	0
Pre-Kindergarten					
English Only	.32	.16	.00	.73	0
Spanish Concurrent	.24	.16	.00	.59	0
Spanish Non-Concurrent	.28	.17	.00	.80	0
5 th Grade					
English Only	.14	.13	.00	.60	0
Spanish Concurrent	.09	.10	.00	.41	0
Spanish Non-Concurrent	.07	.07	.00	.33	0

Table 3 (continued)

Variable	Mean	Standard Deviation	Min	Max	Missing
Intercept					
English Only	.36				
Spanish Concurrent	.30				
Spanish Non-Concurrent	.34				
Slope					
English Only	-.02				
Spanish Concurrent	-.02				
Spanish Non-Concurrent	-.03				
Internalizing Behaviors					
5 th Grade					
English Only	.10	.09	.00	.38	0
Spanish Concurrent	.08	.08	.00	.38	0
Spanish Non-Concurrent	.10	.09	.00	.47	0
Parental Warmth					
36 months					
English Only	4.59	.92	0	5	7
Spanish Concurrent	4.42	.76	2	5	3
Spanish Non-Concurrent	4.82	.57	2	5	11

Table 3 (continued)

Variable	Mean	Standard Deviation	Min	Max	Missing
Pre-Kindergarten					
English Only	4.48	.87	1	5	5
Spanish Concurrent	3.78	1.34	0	5	2
Spanish Non-Concurrent	4.58	.89	1	5	9
5 th Grade					
English Only	3.93	.99	1	5	3
Spanish Concurrent	4.06	1.13	1	5	2
Spanish Non-Concurrent	4.18	.95	1	5	6
Intercept					
English Only	4.61				
Spanish Concurrent	4.35				
Spanish Non-Concurrent	4.81				
Slope					
English Only	-.08				
Spanish Concurrent	-.04				
Spanish Non-Concurrent	-.08				

Table 4

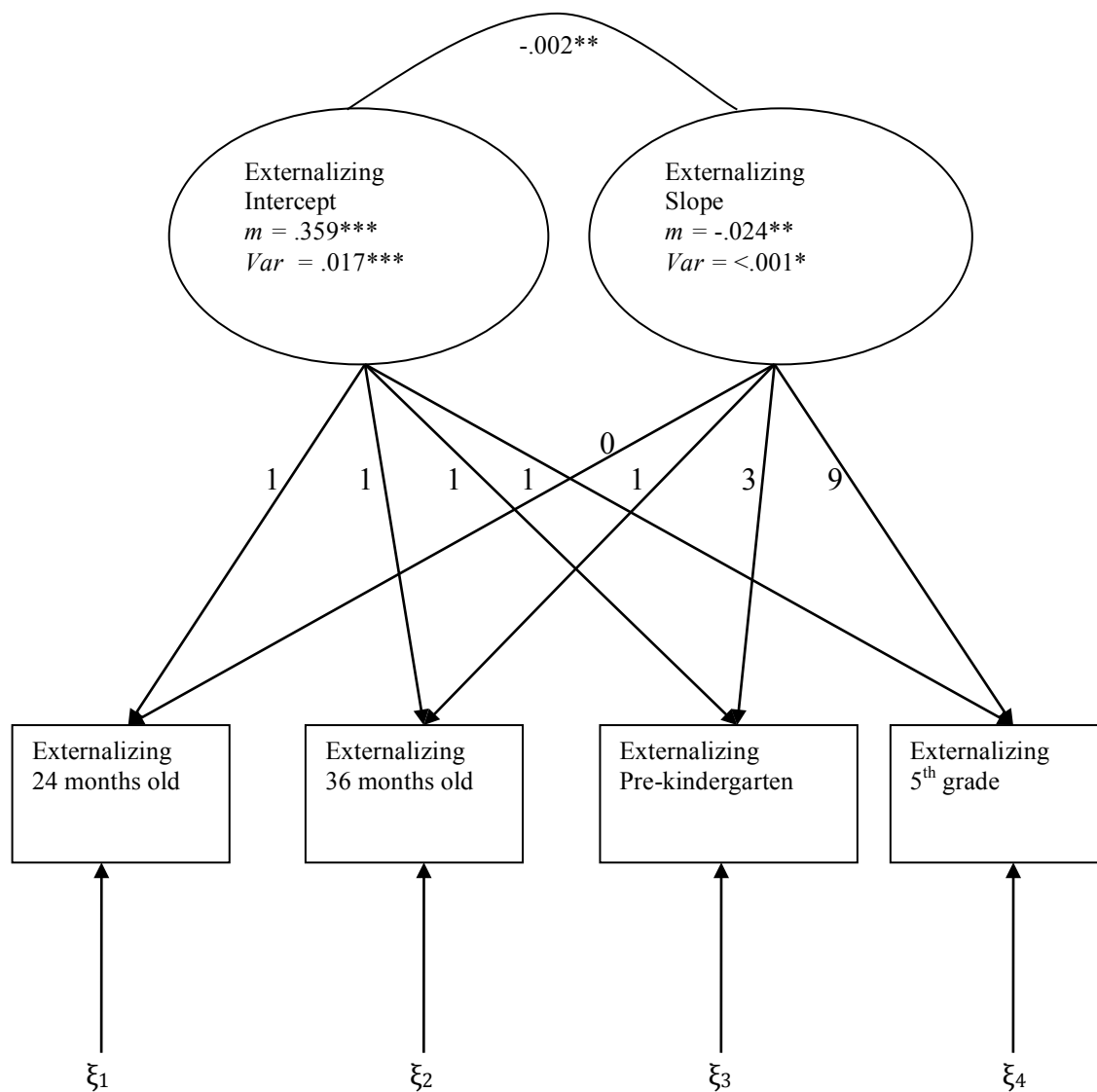
Zero-Order Correlations Between Observed Measurement Variables

Measure	1	2	3	4	5	6	7	8
1. Ext-2	-							
2. Ext-3	.580**	-						
3. Ext-PK	.409**	.541**	-					
4. Ext-5 th	.281**	.379**	.388**	-				
5. Int-5th	.241**	.298**	.208**	.645**	-			
6. Warm-3	.076	-.055	-.065	-.083	-.099	-		
7. Warm-PK	-.048	-.001	.011	-.042	-.006	.272**	-	
8. Warm-5th	-.128	.005	-.121	-.074	-.140	.041	.030	-
9. Poverty	.120	.120	.094	.067	.135	.020	-.096	-.015

Notes: *** $p < .001$, ** $p < .01$, * $p < .05$; Ext = Externalizing behaviors, Int = Internalizing behaviors, Warm = Parental Warmth

Figure 1

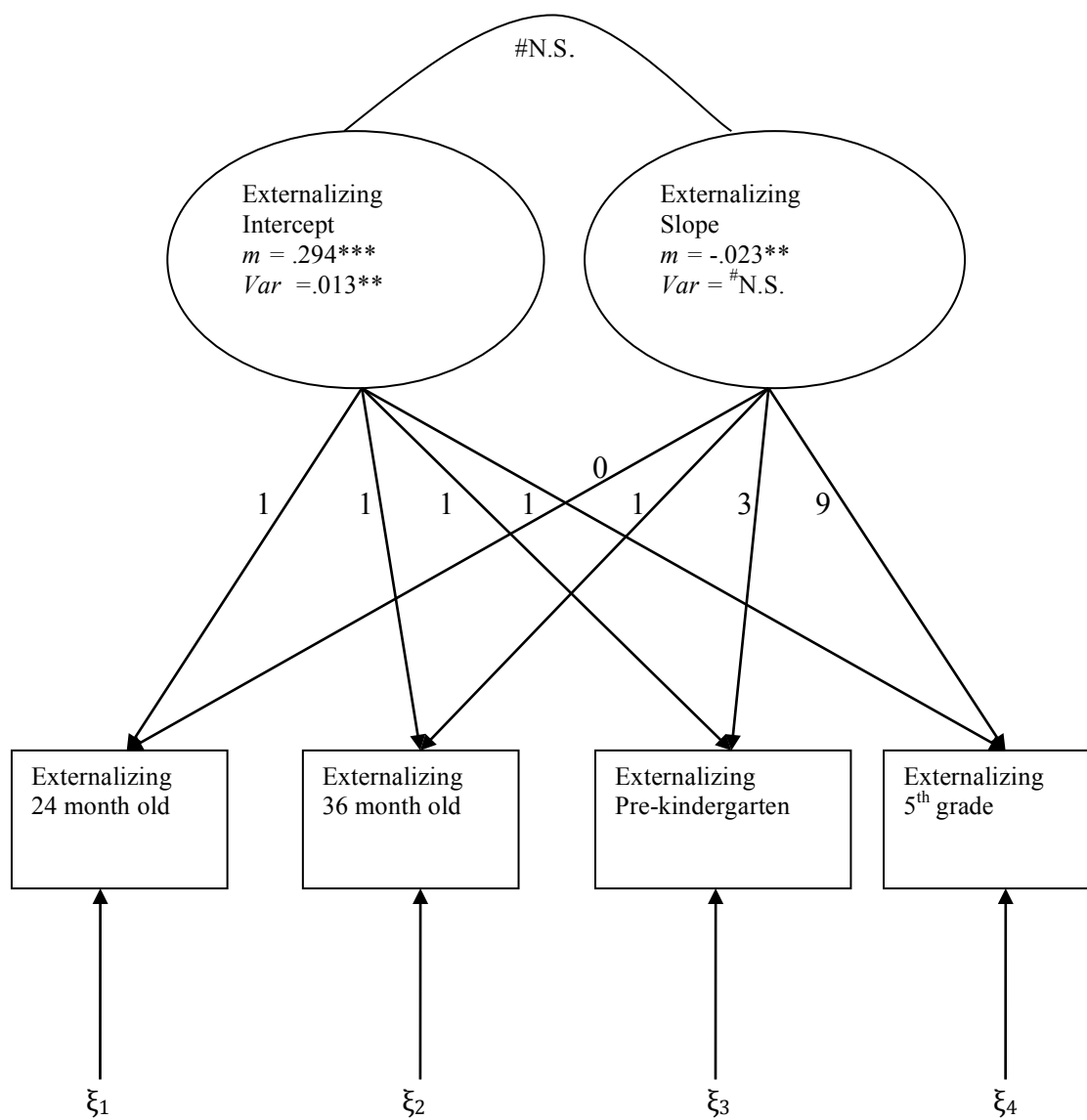
Latent Growth Curve Trajectories of Externalizing Behaviors for the English Only Group



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$

Figure 2

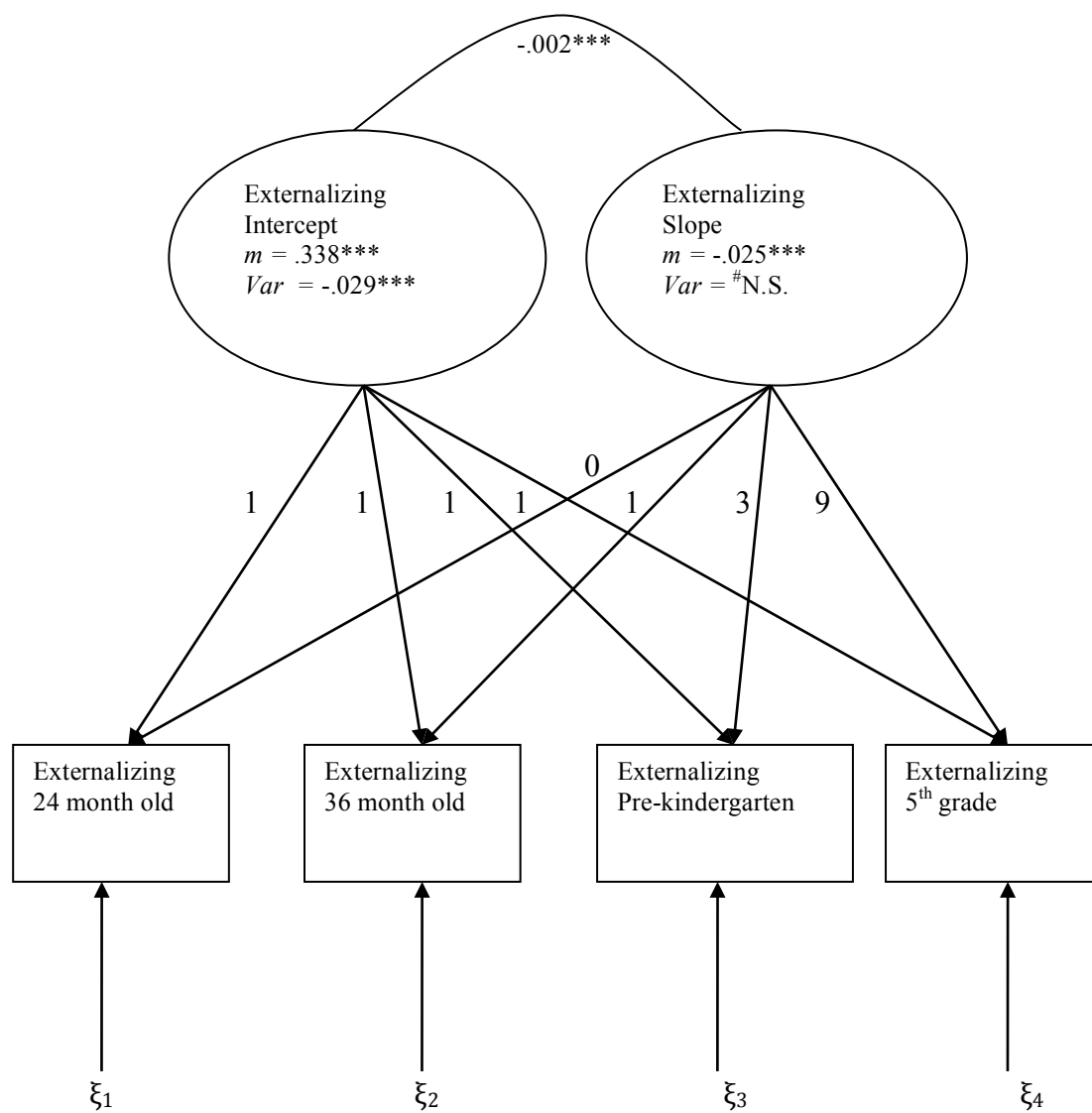
Latent Growth Curve Trajectories of Externalizing Behaviors for the Spanish Concurrent Group



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$
 $\#N.S.$ = Not significant

Figure 3

Latent Growth Curve Trajectories of Externalizing Behaviors for the Spanish Non-Concurrent Group



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$
 #N.S. = Not significant

Figure 4

Externalizing Behaviors of Each Language Acculturation Group.

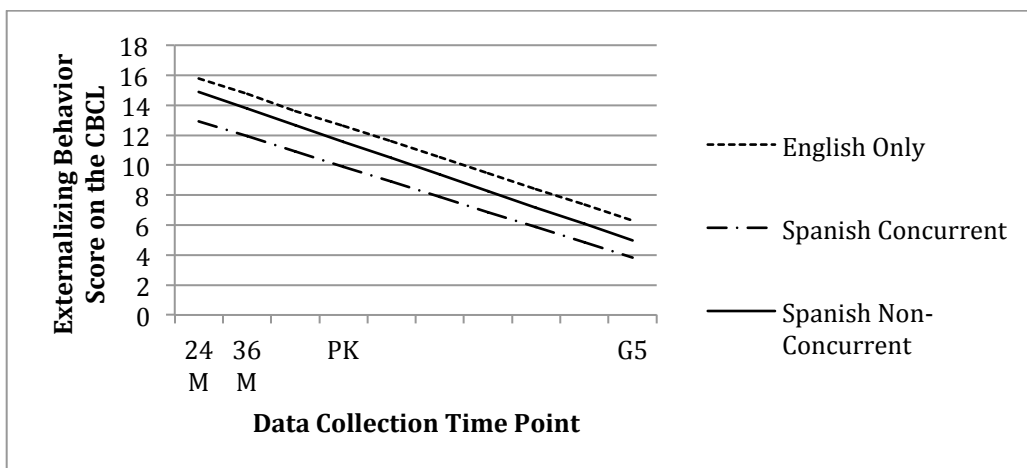
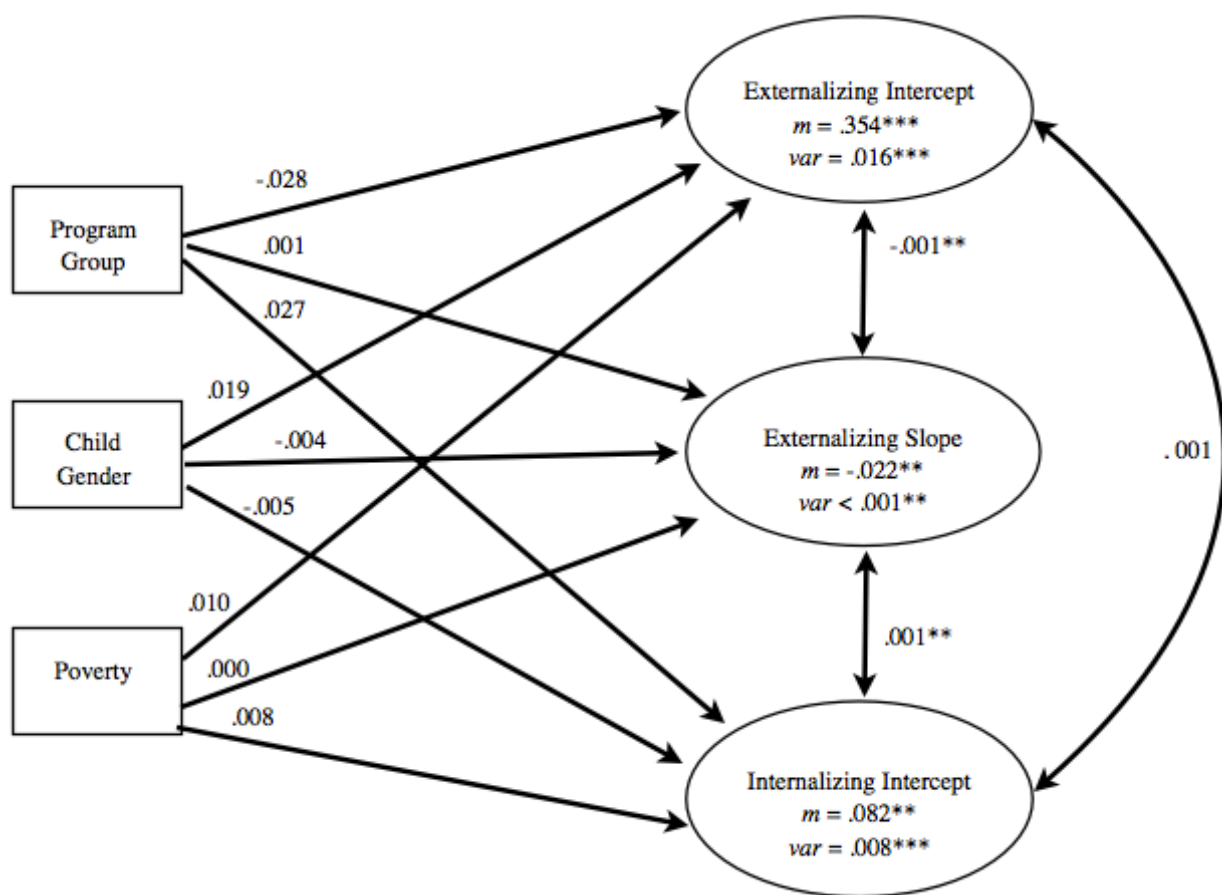


Figure 5

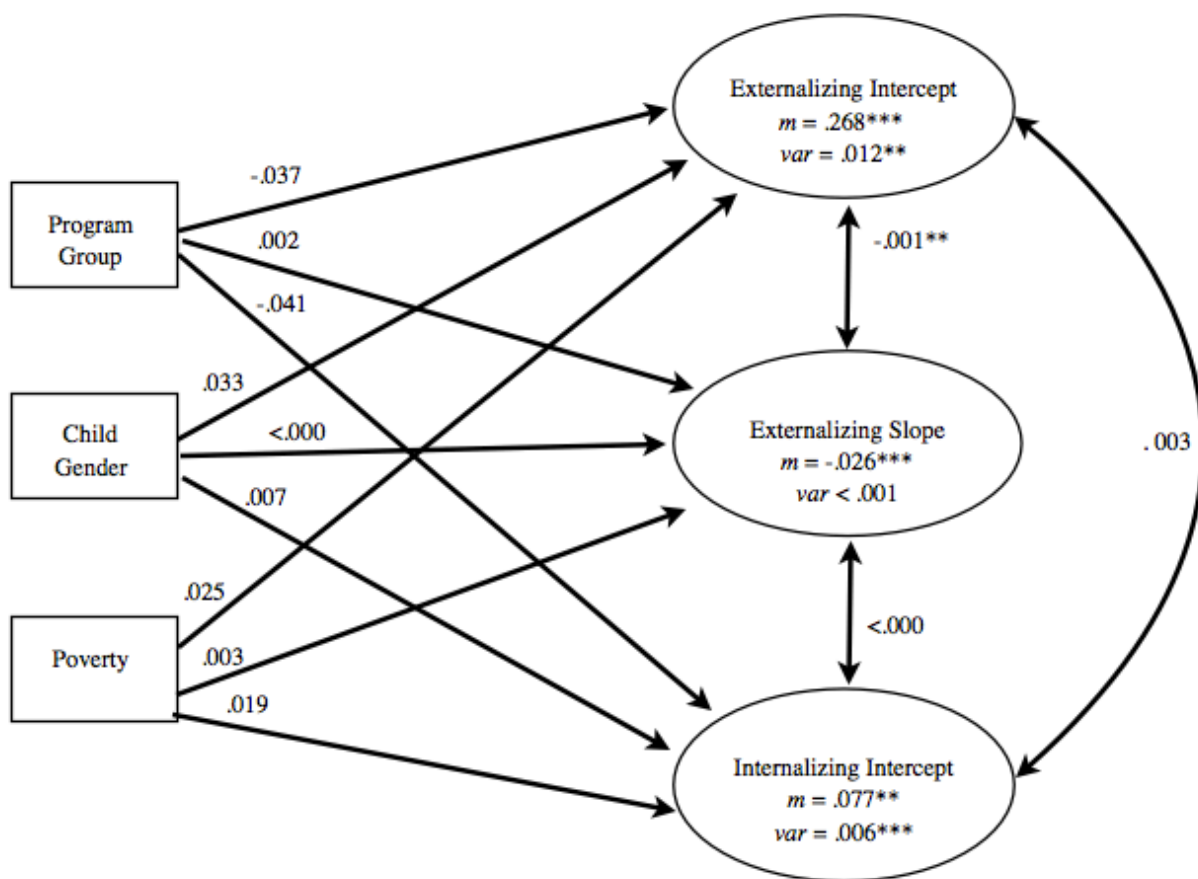
Latent Growth Curve Estimates of Problem Behaviors for the English Only Group After Controlling for Poverty, Program Group, and Child's Gender



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$

Figure 6

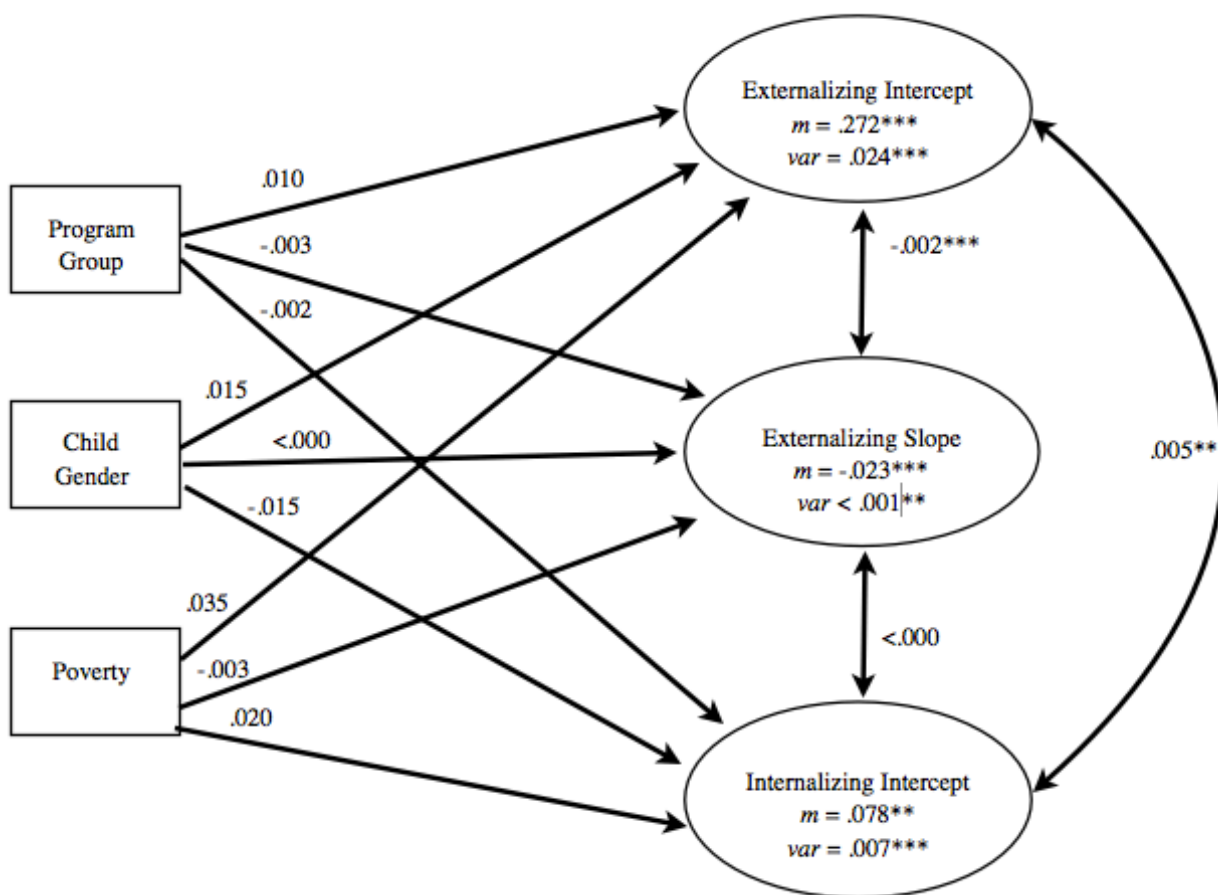
*Latent Growth Curve Estimates of Problem Behaviors for the Spanish Concurrent Group
After Controlling for Poverty, Program Group, and Child's Gender*



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$

Figure 7

Latent Growth Curve Estimates of Problem Behaviors for the Spanish Non-Concurrent Group After Controlling for Poverty, Program Group, and Child's Gender



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$

Figure 8

Externalizing Behaviors of Each Language Acculturation Group After Controlling for Poverty, Child Gender, and Program Group.

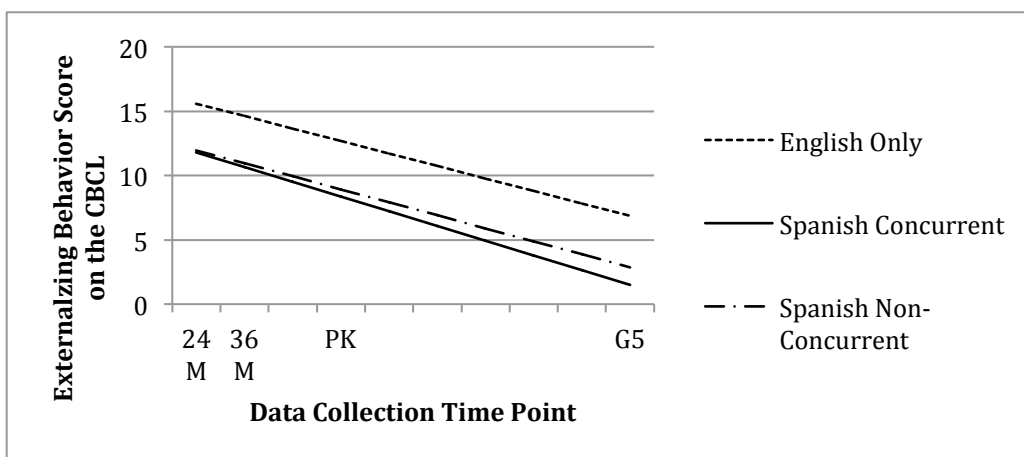
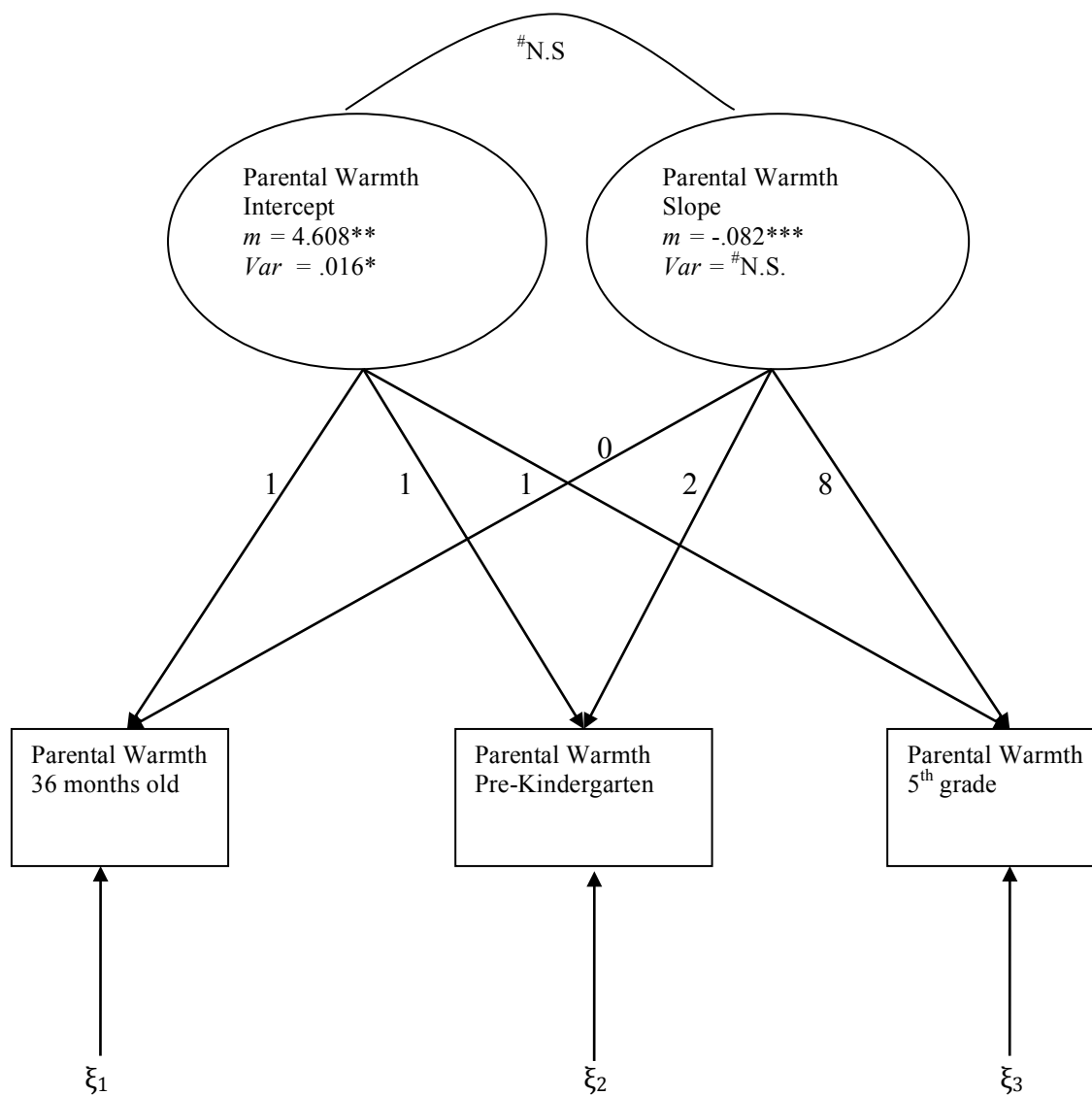


Figure 9

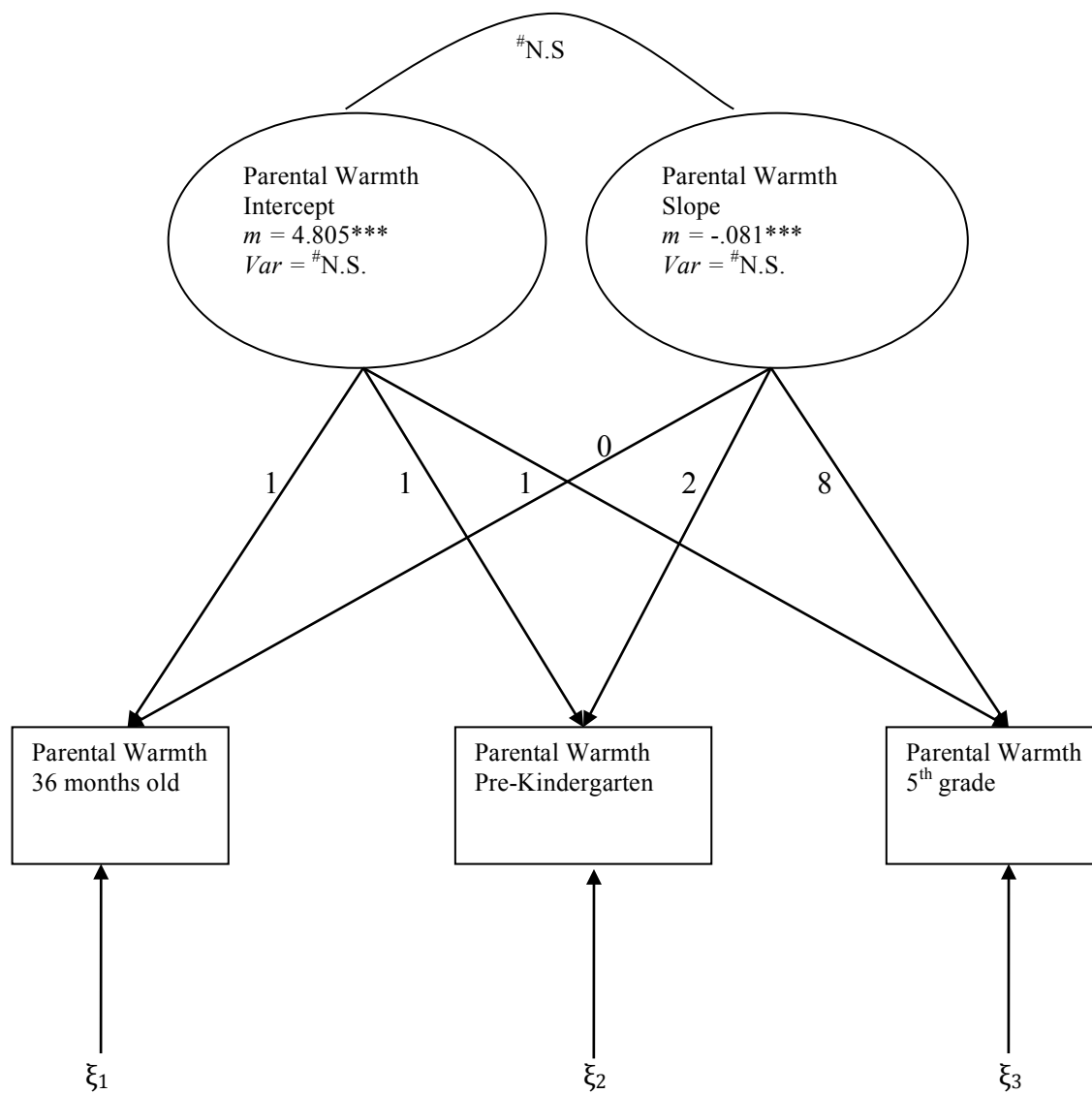
Latent Growth Curve Trajectories of Parental Warmth for the English Only Group



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$
 #N.S. = Not significant

Figure 10

Latent Growth Curve Trajectories of Parental Warmth for the Spanish Concurrent Group



Notes: *** $p < .001$, ** $p < .01$, * $p < .05$
 #N.S. = Not significant

Figure 11

Parental Warmth of Each Language Acculturation Group.

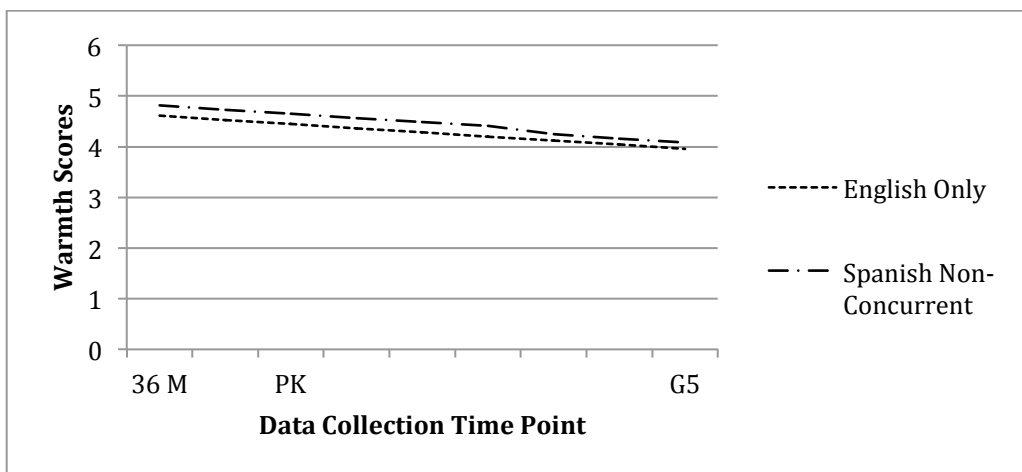
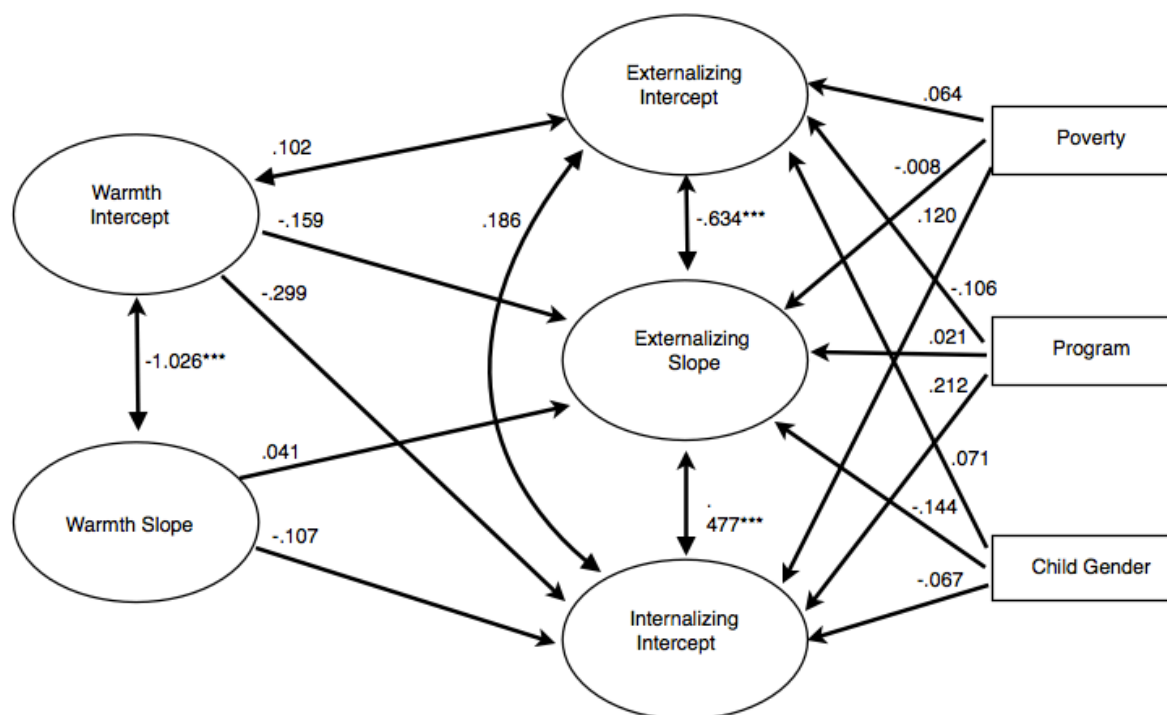


Figure 12

Effects of Parental Warmth on Problem Behaviors for the English Only Group



$$\chi^2 = 28.815 (p = .475)$$

CFI > .999

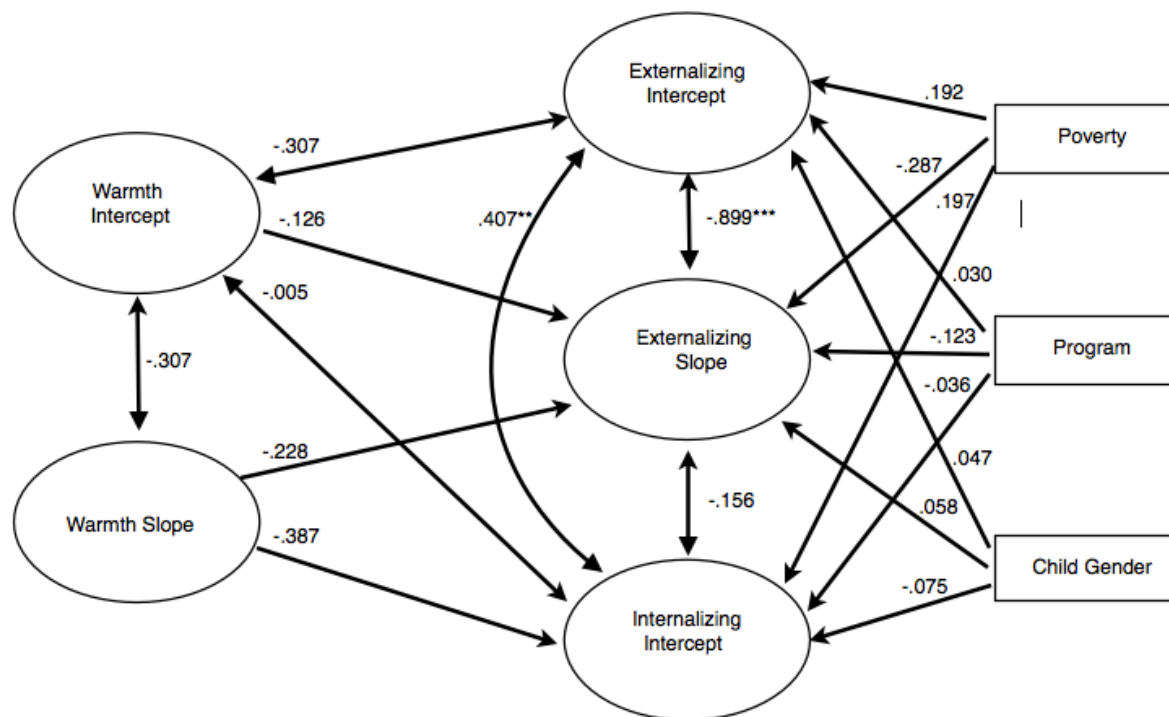
RMSEA < .001

SRMR = .078

Notes: *** $p < .001$, ** $p < .01$, * $p < .05$

Figure 13

Effects of Parental Warmth on Problem Behaviors for the Spanish Non-Concurrent Group



$\chi^2 = 38.978$ ($p = .126$)

CFI = .934

RMSEA = .066

SRMR = .070

Notes: *** $p < .001$, ** $p < .01$, * $p < .05$