Mother-Child Dyadic Synchrony and its Association with Children's Socio-Emotional Competence in Mexican American Families

by

Paulina Velez-Gomez, B.S.

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Approved

Yvonne M. Caldera
Chair of Committee

Malinda Colwell

Michael McCarty

Peggy Gordon Miller
Dean of the Graduate School

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ABSTRACT

Dyadic synchrony refers to a type of interaction between two people characterized by a mutually regulated, reciprocal, and harmonious relationship. Studies have shown that the ability to achieve dyadic synchrony in the mother-child relationship can facilitate social, emotional, and cognitive growth for the child. The present study investigated the predictors of mother-child dyadic synchrony in Mexican American families and their association to the child's socio-emotional competence. Specifically, the study examined the association of maternal parenting stress, maternal childrearing beliefs, family income, maternal education and acculturation level with mother-child dyadic synchrony when children were 24 months old, and how these predicted the child's later social and emotional competence at 48 months. Data were collected from 80 families in the Lubbock area. Results show that mother-child dyads in families with higher SES displayed significantly higher levels of dyadic synchrony. Furthermore, higher levels of dyadic synchrony at 24 months significantly predicted fewer aggressive behaviors in the child at 48 months. Implications of these findings for researchers and practitioners working with Mexican-American families are discussed.

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CHAPTER I

STATEMENT OF THE PROBLEM

Family systems theory posits that a system, such as parent-child relationship, cannot be understood by examining the individual parts in isolation. Accordingly, systems must be understood as a whole (Whitchurch & Constantine, 1993). Traditionally, interactions between children and their caregivers have been studied in terms of broader parenting dimensions, such as warmth, responsiveness, and intrusiveness (Harrist & Waugh, 2002). This approach for studying parent-child relationships has an underlying assumption; it gives the parents a more active role in influencing their child's behavior, underscoring the contributions that the child brings to the relationship. However, parent-child relationships may be best characterized by bidirectional, as opposed to unidirectional processes (Lindsey, Cremeens, Colwell, & Caldera, 2008). In other words, interactions also can be described in terms of their dyadic style (Harrist & Waugh, 2002).

The concept of dyadic synchrony refers to a type of interaction between two people characterized by a mutually regulated, reciprocal, and harmonious relationship (Harrist & Waugh, 2002). According to Mize and Pettit (1997), parent-child dyadic synchrony reflects a history of responsive parenting and is one of the best indications of the quality of the parent-child relationship. Starting from infancy and throughout childhood, the ability to achieve dyadic synchrony in parent-child relationships can facilitate social, emotional, and cognitive growth for the child (Dunham & Dunham, 1995; Garcia-Sellers & Church, 2000; Harrist & Waugh, 2002; Kochanska, 1997; Kochanska & Murray, 2000; Lindsey et al., 2008; Raver, 1996).

Despite the importance that synchronous interactions have on the child's development, literature on the topic is scarce. Furthermore, the studies that have been conducted in this area have included mostly European American families from middle to high socioeconomic status. To date, few studies have examined synchrony constructs with ethnic minorities (Ispa et al., 2004) or low-income samples (Brophy-Herb et al., 2011), and no studies have been found that have been conducted with parents and children from Mexican American families. Given the potential impact of poverty-related stressors on the quality of parenting (Eisenberg, 1998) and possible ethnic and cultural variations in dyadic interactional styles (Harrist & Waugh, 2002), studying dyadic synchrony and children's socio-emotional competence in more diverse samples is particularly important.

Scholarship on child development is showing an emerging interest in the study of minority families' socialization processes. However, a common criticism of research on ethnic minority families is that such studies are based on a comparative perspective, which considers white middle-class families as the norm and minority families as different or deficient (García Coll, Meyer, & Brillon, 1995). Another common trend observed in the research among ethnic minorities, specifically on Latinos, is that this group is frequently treated as if it was one large relatively homogeneous group (Cauce & Domenech-Rodríguez, 2002). However, Latinos come from different countries, and although they might share a common language and some values and practices, each has its own unique historical and cultural traditions. Therefore, the present study is focused

on studying dyadic synchrony in parent-child relationships and its relation to the child's socio-emotional development in one particular group, namely Mexican Americans.

As suggested by Cauce and Domenech-Rodriguez (2002) there are two reasons why we should expect different socialization practices for children in Mexican American families. First, cultural norms and values are different, which can structure parents' childrearing practices and interactions with their children differently. Second, Mexican American families have different ecological niches in which the child grows up. These include the family's socioeconomic status, family structures, and risk environments (Cauce & Domenech-Rodriguez, 2002). Regarding values for childrearing, Latinos in general have been described as more likely than Anglos to value cooperation, collectivism, *respeto, simpatía,* and the belief that authority should not be questioned (Roosa, Morgan-Lopez, Cree, & Specter, 2002). Mexican Americans in particular, also place greater importance on face-to-face contact, physical touch, and sharing with nuclear as well as extended family members (Cauce & Domenech-Rodriguez, 2002).

In regard to the ecological niches in which children are growing up, statistics show that Latinos have fewer economic resources available to support their child-rearing efforts (Cauce & Domenech-Rodriguez, 2002). Within the Hispanic population, Mexican Americans earn the lowest wages, with 20.6% of Mexican Americans earning $35,000 or more, compared to 29.6% and 34.4% for Puerto Ricans and Cubans (U.S. Bureau of the Census, 2010). According to Martinez (2001) only some Mexican Americans are representatives of the middle-class in this country. Furthermore, educational achievement of Mexican Americans remains below the levels of the non-Hispanic white population,

with only a small percentage that has achieved a college level education and professional occupations (Martinez, 2001)

Taking into account the growing rates of Mexican American families in the United States, it is important to understand the processes, values and practices related to childrearing among these families in order to develop effective and culturally sensitive services for this population. Furthermore, acknowledging the dynamics of Mexican American parents and children relations, as well as the children's developmental trajectories, will allow a better understanding of Mexican Americans' strengths that can help maximize their potential and ensure better children's outcomes.

The present study is intended to examine individual, relational, contextual and cultural factors that influence mother-child dyadic interaction and its relation to the child's socio-emotional competence. Specifically, the aim is to understand the associations of dyadic synchrony, child characteristics, maternal characteristics, socioeconomic status of the family, parents' childrearing beliefs, and acculturation with the child's socio-emotional development.

CHAPTER II

LITERATURE REVIEW

Theoretical Frameworks

Bronfenbrenner's bioecological theory. Bronfenbrenner's theoretical perspective focuses on how interactions between individual and contextual factors shape interpersonal relationship processes, and highlights connections between everyday contexts and larger contextual forces (Updegraff & Umaña-Taylor, 2010).

According to Bronfenbrenner (1977), the ecological environment is conceived as a nested arrangement of contextual systems. The first level of these systems is the *microsystem*. The focus of this level is the relation between the person and the immediate setting. For example, in child development, the family constitutes the main microsystem for the child. Therefore, the microsystem includes the child and his/her relations to parents, siblings, and other family members. The second level is the *mesosystem*, which involves the interrelations among major settings containing the person. The mesosystem may also be conceived as a system of microsystems. The mesosytem connects different microsystems in which a child is involved, such as the family and the childcare center, or the family and the neighbors.

The third level of analysis is the *exosystem*, which contains social structures that do not contain the developing person but encompass the immediate settings in which that person is found; therefore, influences, delimits, or determines what goes in the immediate settings (Bronfenbrenner, 1977). For instance, the exosystem takes into account the socioeconomic status of the family, which influences the family's access to resources and

indirectly affects the developing child. The next level is the *macrosystem,* which refers to the patterns of the culture and subculture that define the structures and activities occurring at the levels. In child development, the macrosystem represents the cultural influences that may shape parents' childrearing beliefs and values. The broadest level is the *chronosystem* (Bronfenbrenner & Morris, 1998, as cited in Tudge, Mokrova, Hatfield & Karnik, 2009), which refers to the idea that developmental processes are likely to vary according to specific historical events. For instance, when studying gender role socialization within a family, is important to consider the historical changes that can shape the role of women and men in society.

Bronfenbrenner's ecological model is a good choice for studying parent-child interactions among Mexican American families because it emphasizes multiple levels of analyses to understand what influences these interactions. In the present study, elements from different systems will be considered. At the microsystem level, individual characteristics of the mother and child will be examined, as well as their interaction and mutual influence. From the exosystem level, the socioeconomic status of the family will be taken into account as this can influence resources available to the family and may also add stressors to the family. Finally, broader cultural influences that impact the parent-child relationship will be considered such as parents' childrearing beliefs and acculturation level.

Family systems theory. Family System Theory is derived from *General Systems Theory,* a theoretical framework that groups various microlevel approaches known as "systems theories" (Whitchurch & Constantine, 1993). In general, systems theories posit

that objects are interrelated to one another, and to the environment. For example, parents' behavior toward their children not only depends on the parent's beliefs, but also on how the children have influenced the parents to behave (Lerner, 2002), and how the parents negotiate these beliefs to adapt to different environments. This is what has been defined as "systems thinking" (Whitchurch & Constantine, 1993, p. 325). Among systems theories, family systems theory highlights the importance of examining the connections among individual family members and their relationships within the family (Cox & Paley, 2003).

Systems theories recognize living systems as "involving enormous complexities and properties that emerge from the complex organization of large numbers of parts" (Whitchurch & Constantine, 1993, p. 328). Therefore, from this perspective a system cannot be understood by examining individual parts in isolation; systems must be understood as a whole. Systems theorists call this concept *holism* (Whitchurch & Constantine, 1993).

Another central concept in systems theory is the idea of *emergent properties* (Whitchurch & Constantine, 1993). This means that the behaviors in a system do not emerge from the component parts (e.g., the parent or the child). Rather, they emerge from specific arrangements in the system and from the transactions among parts (e.g., parent-child interaction). The idea of *interdependence* or *mutual influence* is also central for a systems perspective. It suggests that behaviors of the components of the system exhibit mutual influence, meaning that what happens with one component generally affects other components (Whitchurch & Constantine, 1993).

In family studies, systems theories have been used for understanding intrafamily processes, the relation of family systems to other systems (such as relationships with the extended family or their ethnic and/or racial communities), and how systems change (Whitchurch & Constantine, 1993). Following Whitchurch and Constantine, when family issues are considered from several system levels, this allows the researcher to explore questions in a deeper way than just looking at them from a cause-effect approach.

Cox and Paley (2003) suggest that family systems are characterized by three main characteristics derived from systems theory: wholeness and order, hierarchical structure, and adaptive self-organization. First, the idea of wholeness, as discussed earlier, posits that the whole is greater than the sum of its parts and its properties cannot be understood simply from the combined characteristics of each part. Second, a hierarchical structure means that a family is composed of subsystems that are systems in and of themselves. Third, families are characterized by adaptive self-organizations meaning that they can adapt to change or challenges (Cox & Paley, 2003).

When applied to studies of child development, systems theories view development "as resulting from the dynamic transactions across multiple levels of family systems, which regulate a child's behavior" (Cox & Paley, 2003, p. 193). Therefore, they emphasize the importance of considering multiple influences on the child's development.

The idea of interplay between the levels of the family system is particularly important for studying synchrony among parent-child dyads. For example, as Kochanska (1997) suggests, an infant's temperament affects caregiving practices in the family and also moderates the effects of caregiving on the child. Another important contribution

from systems theory for the study of parent-child synchrony is that it points out that individuals' characteristics cannot be understood as static. For instance, rather than talking of "difficult temperaments" or "insensitive mothers" (labels intended to highlight permanent qualities of an individual), we should think of a child and the parents as a part of an ongoing, dynamic system (Cox & Paley, 2003). Therefore, continuity can be located only in the relationship between the child and the family system or caregiving environment.

Finally, systems theories' assumptions converge with other theories for family studies, such as Bronfenbrenner's ecological model, because they agree with the idea that families should be studied in contexts. That is to say, it is important to take into account the sociocultural, historical, political, and economic conditions in which families are located.

García-Coll's integrative model for the study of child development in ethnic minority children. García Coll, Lamberty, Jenkins, McAdoo, Crnic, Wasik, and Vazquez-García (1996) developed a conceptual model for the study of child development in minority populations in the United States. According to these authors, although the cultural influence on development is highly recognized by different studies, models have failed to specify the mechanism by which distal considerations shape development. Based on this premise, the model proposed by García Coll et al. (1996) introduces the consideration of social position and social stratification constructs at the core of its formulation, emphasizing the importance of racism, prejudice, discrimination, oppression

and segregation to the development of minority children and families (García Coll et al., 1996).

The first level of the model is comprised by the *social position factors*: race, social class, ethnicity, and gender. However, social position does not directly affect developmental outcomes and the immediate environments for children; the effect of social position is mediated through social mechanisms such as racism, prejudice, discrimination and oppression. These factors create segregated environments to which minority children and their families are exposed (García Coll et al., 1996).

According to the model, segregation can be presented in different ways. First, through residential segregation, where a family lives determines elements of the environment that will promote or inhibit the child's development. A second type of segregation is the economical segregation, as the economical possibilities of a family determine the access they have to resources that can enhance the development of their children. Also economic hardship can affect parent's psychological well-being, influencing their interactions with their children. Finally, there is the social and psychological segregation, in which families and children are not permitted access to social and emotional resources as a result of social stratification mechanisms (García Coll et al., 1996).

Social mechanisms (discrimination, racism, prejudice, oppression) also directly affect children's experience through social interactions in specific *inhibiting or promoting environments* (García Coll et al., 1996): schools, the neighborhood and the health care system. In response to the family experience within these environments,

families create "*adaptive cultures*" (García Coll et al., 1996), which evolve from historical forces (cultural legacies, traditions, political and economic history) and current contextual demands. The adaptive cultures include a social system defined by sets of goals, values, and attitudes that differs from the dominant culture. "Minority parents must decide what aspects of the ethnic parenting they wish to retain and those they wish to relinquish in favor of the dominant culture's parental values, attitudes and practices" (García Coll et al., 1996, p. 1904)

The *inhibiting/promoting environments* and the *adaptive culture* also have a direct influence in the nature of specific individual family processes and interact with the children's biological, constitutional and psychological characteristics. Moreover, according to this perspective, child characteristics are not only influenced by the environments and adaptive cultures, but can also influence family functioning and the emergence of developmental competencies (García Coll et al., 1996, p. 1904).

García Coll and colleagues' model for the study of minority child development also offers important elements for the study of parenting practices in minority families. According to García Coll (1990), minority parents, like parents in any other ethnic or cultural group, share a unique system of beliefs and practices that overlap but differ in some respects from that of other cultures. Parents try to inculcate cognitive, linguistic, motivational, and social competencies that are considered relevant to their cultural milieu (García Coll, 1990). Additionally, minority parents not only have different developmental goals for their children, but might also perceive, react, and behave very differently to

their infant's cues, behaviors, and demands compared to parents in other cultures (García Coll, 1990).

The present study examines Mexican American mothers' childrearing beliefs and how they might influence the mother-child interaction and the child's socio-emotional competence. Also, by considering how different levels of acculturation can alter these beliefs, it attends to the concept of "*adaptive cultures*" proposed by García Coll et al. (1996), as families can negotiate or change their cultural legacies and traditions in response to current contextual demands.

Mexican-Americans in the United States

The largest group of Latinos in the United States is from Mexican origin, accounting for almost two-thirds of Hispanic individuals in the United States (U.S. Bureau of the Census, 2007). Mexican-heritage people in the United States have evolved from a small, mostly regionally based group, into a large and nationally significant population (Martínez, 2001). In the early 1900's, most of the Mexican-descent population lived in the southwest of the United States; today Mexican Americans live and work in every state of the country, including Alaska and Hawaii (Martínez, 2001).

According to the Census Bureau (2010) Mexican Americans comprise over 63% of Latinos in the US and continues to grow. The Mexican American population increased by 54% between 2000 and 2010, and had the highest numeric change as well (from 20.6 million in 2000 to 31.8 million in 2010). This increase was primarily the result of births rather than immigration: there were 7.2 million births versus 4.2 million immigrants. Mexican-origin children in immigrant and native-born families account for one of every

seven children age 0 to 17 in the United States (Hernandez, Macartney, Blanchard & Denton, 2010). Thus, 35% of Mexican Americans are under 18 years of age compared to 25.7% in Non-Hispanic Whites.

Although this group shares common elements such as language, culture, religion and identification with Mexico, there is also diversity among them. Immigrants have come from many states in Mexico, each with its own cultural characteristics, and within the United States, the life experiences of Mexican Americans vary significantly from coast to coast (Martínez, 2001). Mexican-origin people also are a racially diverse group, with a large proportion of racially mixed individuals. Their appearance shows traces of Indian and European ancestries, as well as some African characteristics (Alba, 2006). For these reasons, Mexican Americans comprise a unique Latino group.

Mexican-origin people in the U.S. have been divided in two major sub-groups: native-born people and foreign-born people. Only about a third of Mexican Americans in the United States arrived as a result of actual immigration (Cauce & Domenech-Rodriguez, 2002) leading to a bigger proportion of native-born people. A large number of Mexican-origin people in the United States have maintained close links with Mexico, which have kept Mexican culture alive in the country and has incentivized a binational identity (Martínez, 2001). For instance, interviews conducted in 1989-1990 within the Latino National Political Survey (as cited in Gonzalez, 2000), showed how the most popular self-referent among people of Mexican background in the United States was *Mexican.*

Mexican Americans also have a unique history in the United States. According to Treviño (2005), there are three important themes in Mexican American history in the United States: land loss, migration, and the Chicano movement. A quote by Martinez (2001) depicts their history in this country:

> For centuries we have been here, in El Norte de Mexico, long before it became the American Southwest. Our ancestors explored and colonized these lands… But the imposition of a border also made us immigrants. And year after year many of us have crossed the line into the United States, a country we helped transform, with cessions of territories and the sweat of our brow, into the world's cornucopia, the land of economic dreams (p. 1).

Before the U.S invasion of the Southwest in the 1840s, Mexicans moved progressively into established communities in Texas, New Mexico, Arizona and California (Martinez, 2001). That migration continued after this area became part of the United States in 1848 and continued growing until The Great Depression in 1929. During the Great Depression the opposition to immigrants increased leading to massive deportations and repatriations (Martinez, 2001). This situation changed again after World War II, which brought labor shortages in the United States, leading to a higher demand of Mexican workers. According to Martinez (2001), from 1940 to the mid-1960s, close to 400,000 Mexicans immigrated legally as permanent U.S residents and an undetermined number crossed the border without documentation.

The history of Mexican Americans in the United States has also been permeated by long periods of discrimination. "People of Mexican origin have been interpreted

negatively more frequently than positively by Americans" (Martinez, 2001, pp. XXV). In states like Texas, for instance, before the Civil-Rights movement Mexicans were confined to separate and underfunded schools into the second half of the twentieth century (Alba, 2006). This situation limited their ability to move ahead educationally and economically (Alba, 2006). However, these started changing with the Chicano Movement in the 1960s and 1970s, when groups of Mexicans fought for equality (Treviño, 2005). The Chicano movement included actions for the restoration of land grants, farm workers' rights, better educational opportunities, voting and political rights, as well as emerging awareness of collective history.

The history of this group is important for understanding the current situation that Mexican American families live today and the challenges they face. As stated by Alba (2006), the humble origins of many Mexican Americans today can be traced to the marginal economic situation of many immigrant families. The lack of legal status shared by many also drives immigrant parents into a social and economic underground and forces many of them to work at jobs that are exploitative in terms of pay and benefits, security of employment, and working conditions (Alba, 2006).

Today, a large segment of the Mexican American population in the United Sates lives in disadvantaged and marginalized conditions. Within the Hispanic population, Mexican Americans earn the lowest wages, with 20.6% of Mexican Americans earning $35,000 or more, compared to 29.6% and 34.4% for Puerto Ricans and Cubans (U.S. Bureau of the Census, 2010). Furthermore, about a fifth of Mexican-origin children in native-born families and immigrant families with at least one parent who is English fluent

live below the official poverty threshold (Hernandez et al., 2010). This percentage jumps to a third of children living below the poverty line when parents are English learners (Hernandez et al., 2010). Mexican American children from low-income families tend to experience various negative developmental outcomes. These include less success in school, lower educational attainments and lower incomes during adulthood (Hernandez et al., 2010).

Educational achievement remains below the levels of non-Hispanic white population; only a small percentage has achieved a college level education and professional occupations (Martinez, 2001). Using the 2010 Census, the percentages of educational attainment for Hispanic and non-Hispanic adults age 25 and above is as follows: Hispanics with less than a high school education was 43% compared with 11.5% for non-Hispanics. Within the Hispanic group, Mexican Americans were the least likely to have completed a high school education, 51% compared to 64-3% for Puerto Ricans and 73% for Cubans. Furthermore, nearly 20% of children in native-born Mexican-origin families have fathers who have not graduated from high-school. For those in immigrant families, this number jumps to 32% for children with English-fluent parents, 50% for those whose parents have mixed language skills, and 69% for those with parents that are English learners (Hernandez et al., 2010).

Considering the statistics presented above, most Mexican American families have fewer economic and educational resources to support their childrearing efforts (Cauce & Domenech-Rodriguez, 2002). According to Martinez (2001) only some Mexican Americans are representatives of the middle-class in this country. This is in part due to

the fact that starting from the 1960's, a social restructuring took place among Mexican Americas: more people of Mexican ancestry obtained well-paying jobs, an increased number of students graduated from college and universities, and many founded new businesses (Martinez, 2001).

Characteristics of Mexican American families. In spite of the disadvantages, research shows that Mexican American families adhere to traditional values that enhance family cohesiveness. Some of the values that have been ascribed to Mexican American families are the importance that they give to face-to-face contact, physical touch, and sharing with nuclear as well as extended family members (Cauce & Domenech-Rodriguez, 2002).

Furthermore, the strengths that have been identified among Mexican American families are the high levels of social capital, collective efficacy, and social support seen in a number of Mexican American communities and families, which are sources of resilience for this group (Caughy & Franzini, unpublished manuscript). Strengths have also been recognized in their health status. Public health epidemiologists have coined the term "Hispanic Paradox" to refer to the fact that Hispanics display more optimal health outcomes despite exposure to greater socioeconomic risk factors (Franzini, Ribble, & Keddie, 2001). For example, Hispanics tend to have positive pregnancies with lower rates of low birth weight births, preterm births, and infant mortality (Caughy & Franzini, unpublished manuscript).

Regarding family composition, Mexican American families tend to live with extended family members. Among Mexican-origin immigrants and native born families,

9 to 20 percent have at least one grandparent at home, and 17 to 33 percent have at least one additional adult relative, including older siblings (Hernandez et al., 2010). Furthermore, Mexican immigrants with less than five years of experience in the United States are more likely to live in extended families than Mexicans in Mexico (Van Hook, 2010).

Some authors suggest that traditional orientations toward gender are common among Mexican American families (Azmitia & Brown, 2002; McHale, Updegraff, Shanahan, Crouter & Killoren, 2005). The concepts of *Marianismo* and *Machismo* have been used to describe the traditional gender roles in the family. *Marianismo* emphasizes the woman's role as a mother, whereas *Machismo* stresses the man's role as the head of the household (Cauce & Domenech-Rodriguez, 2002).

These traditional roles can also be translated into parents' socialization of their daughters and sons. Azmitia and Brown (2002) studied Mexican American families with two adolescent siblings to investigate whether parents exerted differential treatment for girls and boys. These authors found that parents were more likely to constrain or restrict their daughters' than their sons' activities. However, this was more pronounced on mothers and fathers with stronger ties to Mexican culture and limited socioeconomic resources.

Similar results were found by McHale et al.'s study (2005). These authors explored if Mexican American parent's cultural orientations were linked to patterns of differential treatment between daughters and sons. Findings showed that parents with stronger orientations to Mexican culture were more likely to display gender-typed

patterns of differential treatment and that these orientations organized their children's roles and activities than parents with weaker Mexican orientations. In families where parents were more enculturated within Mexican culture, older brothers with younger sisters performed relatively fewer chores. Also, older sisters with younger brothers were granted fewer privileges than their brothers. However, an important result from this study is that although parents' cultural orientations had implications for family roles and activities, they found less evidence that they made a difference for relationship dynamics such as parental warmth and control.

Although cultural beliefs and values play a role in shaping dynamics in Mexican American families, social and economic conditions are also important for understanding family roles and responsibilities (Azmitia & Brown, 2002). For instance, Grusec et al. (2000, as cited in Azmitia & Brown, 2002) suggest that parents can select cultural beliefs, values and practices in response to the changing demands of their everyday environments and their children characteristics and actions.

One way that parents' childrearing beliefs and practices can be modified is through the parents' acculturation process. For instance, studies among Mexican American families have found that mothers with lower levels of acculturation are more likely to hold authoritarian practices, and that as maternal acculturation increases, parents report greater use of authoritative practices (Knight et al. 1994; Parke et al., 2004, Rodriguez & Olswang, 2003).

Regarding the use of more authoritarian practices among Mexican American families some authors discuss that the use of these practices is somehow adaptive for

these families. In this matter, Knight et al. (1994) propose that by holding more authoritarian and controlling practices, Mexican families are able to ensure family cohesion. Likewise, Hill et al. (2003) discus how among Mexican American parents, control co-occurs with high acceptance for the child, showing that being firm and warm at the same time is a way of showing parental concern and care for the child.

Mexican-American families' beliefs and values related to childrearing. Family cultural values are the cultural scripts that family members ascribe to and represent central or desirable goals that shape family interaction patterns and parental socialization strategies (Gamble & Modry-Mandell, 2008). It is important to study children within the sociocultural context in which they are raised because their development cannot be separated from their cultural heritage (Delgado & Ford, 1998).

Development and socialization in different cultures originate as adaptations to different ecological and economic conditions (Greenfield, 1994). Furthermore, these different adaptations are reflected and rationalized in different value orientations. Mexican Americans' values orientation stresses *interdependence*, which characterizes the cultural and cross-cultural roots of socialization practices and developmental goals among this group (Greenfield, 1994). Interdependence or collectivism is a belief system that is held by about 70% of the world's population (Triandis, 1989, as cited in Greenfield, 1994). Collectivistic cultures view their accomplishments as being dependent on the outcome of others. Interdependence and group collaboration is valued as a way for the entire group to benefit and grow (Ruiz, 2005).

On the other side of the spectrum is *independence*, which emphasizes separation, individuation and self-creation (Greenfield, 1994). As stated by Greenfield, independence and interdependence are intertwined phenomena, as all human beings are both individuals and members of the social group. However, every group selects a point in the independence and interdependence continuum as its developmental idea.

Rooted in their collectivistic orientation, Latino families have distinctive values and beliefs that guide parents' socialization practices. According to Tapia-Uribe and collaborators (1994), the social and cultural context of childrearing in Mexican families is characterized by an emphasis on respect and obedience, less emphasis on independence and separation during childhood, and greater maintenance of kinship ties throughout the life course (Tapia-Uribe, LeVine & LeVine, 1994). Therefore, values such as *familismo*, *personalismo*, *respeto* and *simpatía* have been identified in different research studies as being representative values among many Latino families, including Mexican American families.

Familismo refers to the importance of family closeness, getting along with the family and contributing to the well-being of its members (Cauce & Domenech-Rodríguez, 2002). Mirande (as cited in Gamble & Modry-Mandell, 2008) describes *familismo* as a significant component in Mexican-American families because families provide emotional support for a child as she or he develops close bonds with the immediate and extended family network. Mexican American parents promote a sense of family unity by encouraging close relationships with siblings and relatives (Delgado & Ford, 1998).

Familismo also has been shown to serve as a protective factor among Mexican descent young children (Gamble & Modry-Mandell, 2008). In their study, Gamble & Modry-Mandell found that warmth and closeness in family relationships, along with high levels of a cultural value endorsing interdependence in those relationships, were related to less behavioral problems among preschool-aged children. Therefore, a strong sense of family closeness is considered by Mexican American parents as a value to be inculcated in their children.

Personalismo is defined as the importance placed on personal goodness and getting along with others (Cauce & Domenech-Rodríguez, 2002). More specifically, *personalismo* refers to behaviors and actions that demonstrate a direct interest in and concern for others (Garza & Watts, 2010). *Personalismo* and *familismo* are values that are characteristic of the collectivistic orientation in Latino Culture, as they place emphasis on family solidarity, obligation and parental authority (Cauce & Domenech-Rodríguez, 2002).

Another value that Mexican American families consider important to encourage in their children is *respeto*. This value is related to the idea that cooperative behavior and deference by children to parental authority is expected (Garza & Watts, 2010). *Simpatía* is also a central value for Mexican American families. This value refers to the importance of respect and politeness toward others, which leads to harmonious, smooth, pleasant and empathetic interpersonal relationships (Triandis et al., 1984, cited by Yu et al., 2008). Similarly, *Simpatía* accounts for individuals' higher interpersonal helping and behaving in a socially desirable manner (Levine, Norenzayan, & Philbrick, 2001). The value of

simpatía is related with learning and practicing social skills to maintain harmony in relationships (Gamble & Modry-Mandell, 2008).

In general, these cultural values of Mexican American families show the importance that these families place on close relationships with others. Therefore, by promoting family closeness, close bonds and getting along with others, parents can prepare their children to be socially competent individuals.

Dyadic Synchrony

The concept of *dyadic synchrony* refers to a type of interaction between two people; it is "an observable pattern of dyadic interaction that is mutually regulated, reciprocal, and harmonious" (Harrist &Waugh, 2002, p. 557). Synchrony-related constructs have been defined in the research literature in a variety of ways: mutual responsiveness, contingent responsivity, reciprocity, mutuality, mutual contingency, and social contingency (Harrist &Waugh, 2002). Fogel (1993) cited by Harrist and Waugh (2002) argues that most operationalizations of synchrony assume unilateral anticipation and adjustment of one partner to the other, ignoring the "systemic wholeness" and dynamic nature of the interaction. Therefore, he defines synchrony as a dynamic adaptation on the part of both partners: "a process of mutual negotiation that leads to patterns of mutually coordinated actions" (Harrist & Waugh, 2002, p. 557).

Maccoby (1983, as cited in Kochanska, 1997) was one of the first authors to introduce the idea of a *system of reciprocity* to study parent-child socialization. According to Maccoby (1983), a *system of reciprocity* is conceptualized as a "mutually binding, reciprocal and mutually responsive relationship" (Kochanska, 1997, p. 94).

Based on Maccoby's ideas, Kochanska proposed the construct of *mutually responsive orientation* to describe parent-child interactions characterized by two elements: the mother's and child's cooperation or responsiveness to each other, and a shared dyadic positive affect (Kochanska, 1997). Shared cooperation or responsiveness with each other includes maternal responsiveness to the child and the child's committed compliance to the mother. Shared positive affect reflects interactions filled with positive emotions emotion on the part of both members of the dyad (Kochanska & Murray, 2000).

Although Kochanska's definition of *mutually responsive orientation* has been widely used for research in synchronous interactions, Harrist and Waugh (2002) suggest that synchrony can occur without positive emotion expression on the part of the interacting partners, although synchrony and positive affect are related. Harrist and Waugh (2002) also support the idea of looking at synchrony more in terms of a continuum rather than an "all or none condition" (p. 558). They suggest it is more accurate to think of dyadic interactions approaching synchrony or moving away from synchrony, instead of thinking in terms of synchronous versus non-synchronous interactions.

Implications of synchronous interactions on child development. The ability to achieve dyadic synchrony in parent-child relationships can facilitate social, emotional, and cognitive growth for the child (Dunham & Dunham, 1995; Garcia-Sellers & Church, 2000; Harrist & Waugh, 2002; Kochanska, 1997; Kochanska & Murray, 2000; Lindsey et al., 2008; Raver, 1996). Starting from infancy, synchronous relationships serve the infant in different ways: by enhancing multisensory processing, facilitating homeostatic

regulation, and facilitating the formation of a secure attachment to the caregiver (Harrist &Waugh, 2002).

During toddlerhood, synchronous interactions between the parent-child dyad, help the child in becoming a more "sophisticated social partner" (Harrist &Waugh, 2002, p. 572). During this period, dyadic synchrony facilitates the child's language acquisition and communication skills, as well their autonomy development, through providing children ways to practice self-regulatory skills as they learn to comply with adult wishes (Harrist &Waugh, 2002).

Following Harrist and Waugh (2002) the increased cognitive abilities and communicational skills of the child during the toddlerhood period leads him/her to be able to assert desires and needs in a variety of ways. Furthermore, toddlers start verbalizing their emotions and this may lead to a change in the nature of the interaction for the caregiver. As a result, caregivers need to broaden their social-cognitive and behavioral repertoires in order to accommodate to the child's developing communicative style (Harrist & Waugh, 2002).

There is evidence that synchronous interactions between parents and children in the toddlerhood period can enhance children's self-regulatory skills (Dunham & Dunham, 1995; Garcia-Sellers & Church, 2000; Harrist & Waugh, 2002; Raver, 1996). Dunham and Dunham (1995) developed a model to explain how synchronous interactions facilitate self-regulation in toddlers. This model is called the *social contingency model* (Dunham & Dunham, 1995). According to this model, episodes of contingent and

reciprocating interactions during toddlerhood hold the child's attention effectively and this can lead to experiences of positive affect (Dunham & Dunham, 1995).

Based on these premises, Raver (1996) studied 47 mother-child dyads to understand how social contingency experiences were related to children's self-regulation of their own emotions and their empathic responses to others emotions when children were 2-years-old. In a free play task, Raver evaluated dyads time spent in joint attention and dyadic turn taking behaviors as social contingency measures. Children's self-regulation strategies were then observed during a delay of gratification task. Empathic responsiveness was rated by observing children's responses towards an experimenter who pretended to be injured. Results showed that social contingency was related to children's use of self-regulatory strategies, but not to empathic responsiveness. Particularly, children who spent more time in joint attention with their mothers during free play also spent more time distracting themselves away from the source of distress and less time seeking comfort when they go through delay gratification experiences.

Further evidence for the link between synchrony and self-regulation during toddlerhood is provided by Garcia-Sellers and Church (2000). These authors studied 26 mother-child/father-child dyads' interactions during a problem-solving task. They found that ratings of mother-child synchrony were negatively related to toddler's avoidance and frustration during the task. In other words, when mother-child dyads rated higher on synchrony, children showed less avoidance and frustration during the task.

When children reach preschool and early school years, synchronous interactions between the parent and the child continue to be important because they help children to

be more socially competent in peer interactions (Harrist & Waugh, 2002). Also, during early childhood, parent-child synchronous relations reduce the parent's need for using power or coercion strategies (Kochanska 1997; Kochanska & Murray, 2000). According to Kochanska, when a mutual responsive orientation becomes established between the parent and the child, the parent finds it easier to obtain the child's willingness to comply without the need to use strong pressure (Kochanska, 1997). In other words, if the parent has been responsive to the child's needs, the child starts to feel an internal obligation to the parent and the relationship, and wishes to cooperate with the parent. Therefore, establishing a synchronous parent-child relationship helps the parent to reduce the need to resort to authoritarian parenting practices.

Synchronous parent-child relations have also been associated with the child's eagerness and readiness to internalize parental goals and values (Deater-Deckard & O'Connor, 2001; Kochanska, 1997; Kochanska & Murray, 2000). For instance, in a longitudinal study, Kochanska (1997) evaluated mother-child mutually responsive orientation and its association with mothers' use of power in disciplinary interactions and children's degree of internalization of maternal rules. Mothers and children were studied in two points in time, when children were 26-41 months, and when they were 43-56 months. Results from this study show that in dyads high on mutually responsive orientation, particularly those who maintained that orientation throughout early childhood, mothers used less power strategies and children developed higher feelings of internal obligation regarding maternal goals and values.

Furthermore, in a more recent study by Kochanska and Murray (2000) the authors evaluated if positive implications of mother-child mutually responsive orientation demonstrated at toddler and preschool age, extended into early school age. Specifically, they examined the long-term consequences of mutually responsive orientation for the development of conscience. Their results indicate that children who as toddlers experienced mutually responsive orientation in the interaction with their mothers were more eager to accept rules and requests coming from their mothers when they were at early school age, and were also more internally regulated while following another adult's directions. Although mother-child mutually responsive orientation at preschool age also predicted children's future conscience, this association was weaker than the one found for the toddlerhood period. This last results points to the importance of the early relationship between mother and the child for future development (Kochanska & Murray, 2000).

Factors influencing dyadic synchrony. Some researchers have suggested that parent and child gender may account for variations in the manifestations of synchrony, as well as differences in connections between synchrony and children's development (Garcia-Sellers & Church, 2000; Harrist & Waugh, 2002; Kochanska, 1997; Lindsey et al., 2008; Raver, 1996). For instance, Raver (1996) suggests that parents provide more regulation to girls' negative emotions than they do to boys' negative emotions. Therefore, this encourages girls' relatedness to others, while it contributes to boys' autonomy.

Studies that have included both mothers and fathers for studying synchronous relations and the child's developmental outcomes present mixed evidence. In a study with toddlers and their parents, Garcia-Sellers and Church (2000) examined the relations

between mothers' and fathers' interaction with their child and toddler's self-regulatory behavior. They found that mothers' and fathers' interactions were similar on average for all measures (cognizance, focus, synchrony, and direction), but differed in the pattern of how the interaction related to children's self-regulatory behavior. Mothers' interaction was a stronger predictor of children's behavior. Specifically, mother-child synchrony strongly predicted child self-regulatory behaviors, pattern not seen in father-child dyads.

On the other hand, the study by Lindsey et al. (2008) presents different results on how the parent's gender influences the synchronous interaction and the future child's adjustment. These authors conducted a study to evaluate parent–child synchrony (including mothers and fathers) and its link to children's communicative competence and self-control. Synchrony was assessed when children were 18 months during a semi structured parent–child play activity. Measures of children's communicative competence and self-control were obtained when children were 36 months. Results show that father-child mutual compliance was related to both indices of children's self-control, whereas mother-child mutual compliance was related only to child active engagement with the forbidden toy.

Other studies have examined aspects of the family's environment that might be related to the quality of parent-child synchronous interactions. For instance, Deater-Deckard and O'Connor (2001) conducted two studies to examine between- and within-family variations (sibling differences) on parent-child dyadic mutuality, as well as gene-environment processes. For the first study, they included 125 pairs of identical and same-sex fraternal 3-year-old twins. For the second study, 102 pairs of adoptive and biological

siblings were included. Among the results, they found that in both studies dyadic mutuality was greater in families of higher SES. Also, they found that parental contribution to dyadic mutuality was highly specific to differences in sibling children's dyadic behaviors. Therefore, parent-child mutuality was found to be dyad-specific within the family.

In conclusion, evidence shows that when studying parent-child relations, both environmental and individual characteristics of the members of the dyad need to be taken into account. Furthermore, studies on dyadic synchrony suggest that parent-child behavior arises as a product of different patterns of child characteristics and adult socialization strategies (Moscolo & Fischer, 2007). This is consistent with the idea proposed by systems theories which suggest that behaviors in a system do not emerge from the component parts themselves; rather, they emerge from specific arrangements in the system and from the transactions among parts (Whitchurch & Constantine, 1993).

Emotional Competence in Preschoolers

"Emotions are both processes embedded in and products of social interactions and relationships" (Parke, 1994, as cited in Colwell, 2000, p. 1). Because emotions are embedded in the social context, emotional competence is an important aspect of children's developing social competence (Colwell, 2000). Emotions can also become the content of social exchanges (Lewis, 1998).

During the preschool years the child goes through significant advances in self-regulatory capacities related to emotional competence (Thompson & Goodman, 2009). These advances are a product of multiple influences. First, there are important advances

in brain development, especially in regions relevant to self-control. Second, parents increase their use of explanations, negotiation, among other strategies, to promote children's behavioral cooperation through self-control rather than through adults' intervention. Third, children begin to better understand how their feelings can be managed by seeking others' assistance, learn to avoid or ignore emotionally arousing situations, and redirect the activity to a more emotionally satisfying one (Thompson & Goodman, 2009).

Parents can guide the growth of emotional competence in different ways. They do it through specific practices such as how they respond supportively or critically to the emotions of the children, directly intervene to manage their emotions, model emotion or emotion regulation at home, or socialize emotional development in other ways (Thompson & Goodvin, 2007). For example, through their reactions to their children's emotions, parents can teach their children how to manage their emotion by teaching them how and when to express emotion and how to interpret other's emotional displays and behaviors (Eisenberg, 1998). Parenting practices such as a warm, responsive parent-child relationship have also been linked to children's emotional competence (Colwell, 2000).

Parents' socialization of emotions can also be influenced by the economic circumstances of the family (Eisenberg, 1998). According to Eisenberg (1998) financial stress can affect the quality of the marital relationship, which in turns influences the quality of parenting. Parenting that is not nurturing or inconsistent is linked to low regulation in children and problems in socio-emotional development and behavior adjustment (Eisenberg, 1998).

Literature on children's emotional development also recognizes the bi-directional nature of the socialization of emotions (Eisenberg, 1998; Moscolo & Fischer, 2007). Moscolo and Fischer (2007) described a model for converging and diverging pathways in the development of self and socio-emotional behavior that arises as a product of different patterns of child temperament and adult socialization. The model identifies six pathways toward the development of three types of socio-emotional moral selves. The first three pathways are considered normative pathways. The first pathway involves children who exhibit temperamental styles characterized by positive affect, capacity for high levels of effortful control, and a heightened capacity for empathy. Such children can profit from parents' use of inductive child-management strategies to regulate the children's behavior. Rule internalization is facilitated by children's empathic disposition and capacity to regulate behavior in terms of parental standards.

The second pathway involves children with dispositions toward negative affect, such as irritability or frustration, and high capacity for self-regulation and attentional focus. Although such children enter social interactions with a disposition toward anger and aggression, thanks to their capacity for self-regulation, such children can learn to regulate angry dispositions if they are provided with consistently firm but non-hostile parental discipline (Moscolo & Fischer, 2007). The third pathway includes children who exhibit fearful and inhibited affective biases. For such children, gentle discipline that functions to modulate fear reactions to subjectively tolerable levels is necessary to promote rule internalization (Moscolo & Fischer, 2007).

The model also specifies three non-normative developmental pathways. The first of these pathways involves movement toward externalizing and antisocial behavior. Children who are temperamentally disposed to negative affect and poor self-regulation are at risk for taking this developmental pathway. Due to their relative inability to control aggressive behavior, such children are more likely to generate harsh or extreme discipline strategies (Moscolo & Fischer, 2007). Some adults are likely to respond to their children's aggression with hostile discipline. These child management strategies have the dual effects of precipitating shameful affect as well as aggressive reactions to shame experiences (Moscolo & Fischer, 2007). Other parents respond by "giving in" to their child's aggressive behavior, providing social reinforcement that perpetuates a child's aggression (Moscolo & Fischer, 2007).

The second non-normative pathway involves movement toward self-conscious and internalizing social interactions (Moscolo & Fischer, 2007). Children who are temperamentally biased toward fearful or inhibited affect and who may be the recipients of harsh or affectively insensitive discipline will find it difficult to develop strategies for regulating fearful and self-conscious affect. Such children are at risk for the development of internalizing regulation strategies. However, according to Moscolo and Fischer (2007), recent research also shows that in some circumstances, temperamentally inhibited children may also develop towards the externalizing pathway and become highly aggressive. This is the last non-normative pathway, which can occur in situations in which temperamentally inhibited children are raised in dysfunctional or violent families and/or are rejected by their peers.

The quality of parent-child relationships can also influence children's expression and regulation of their emotions (Eisenberg, 1998). Attachment styles and relationships are a clear example of this influence. Securely attached infants whose parents are consistent and appropriately responsive to the infant distress help the children learn that is acceptable to exhibit distress and to seek others for comfort. On the other hand, an avoidant infant whose parents are nonresponsive to his or her distress signals can learn to inhibit emotional expressiveness as well as other-directed self-regulatory strategies (Bridges & Grolnick, 1995, as cited in Eisenberg, 1998).

Synchronous interactions are another indicator of parent-child relationship quality that have been linked to children's socio-emotional competence (Colwell, 2000; Harrist, Pettit, Dodge, & Bates, 1994; Mize, & Pettit, 1997; Vizziello, Ferrero, & Musicco, 2000). Interactional synchrony can contribute to children's social and emotional competence by providing an opportunity for children to practice and experience sensitive behavioral and emotional mirroring with a partner (Harrist et al., 1994). Interactional synchrony may also contribute to children's competence by making children more open to parents' intentional socialization efforts (Colwell, 2000).

Some studies have found a direct link between parent-child synchronous interactions and children's socio-emotional competence (Harrist et al., 1994; Vizziello et al., 2000) while others propose that synchrony act as a moderator between parents' practices (such as emotion coaching) and children's emotional competence (Colwell, 2000). Harrist et al. (1994) examined predictive relations among mother-child synchrony and children's social adjustment months later. Thirty families were observed at home in

the summer preceding the children's entrance to kindergarten year. In the following fall and winter, data on children's socio-emotional adjustment was collected in the school setting. Teachers completed questionnaires about the children's social behavior and adjustment (aggression and withdrawal). Also, peer sociometric interviews and observations of children during free playtime were gathered.

Results show that high levels of positive synchrony were associated with a lack of adjustment problems in kindergarten. Specifically, children from mother-child dyads high on synchrony were viewed as competent by teachers, as nonwithdrawn by observers, and as nonaggressive by both teachers and peers (Harrist et al., 1994). According to these results, synchronous interactions can serve as an optimal context for social learning because in synchronous interactions children learn how to respond contingently and pace interactions appropriately, which later can be reenacted in their interactions with others (Harrist et al., 1994).

Vizziello et al. (2000) also suggest a link between synchrony of parent-infant interaction and the way children open themselves to new relations with others. The authors observed 28 parent –child dyads (toddlers and preschoolers) as they separated and reunited at day care, and as the children interacted with peers after separation from parents. They found that, after separation from their caregiver, children from high synchrony dyads easily integrated into peer play, and were more likely to act as leaders than children from low or medium synchrony dyads (Vizziello et al., 2000).

Synchrony can also moderate associations between maternal emotion coaching and children's emotional competence (Colwell, 2000). In a study with 41 preschool

children, Colwell examined the associations between maternal emotion framing, maternal expressiveness, mother-child synchrony, and the presence of siblings, and children's emotion understanding and emotion regulation. Results show that children in highly synchronous dyads whose mothers used highly negative emotion framing showed less emotion understanding and were rated by teachers as having poorer emotion regulation. In contrast, children in highly synchronous dyads whose mothers used mildly negative emotion framing were rated by teachers as having better emotion regulation (Colwell, 2000).

In conclusion, evidence shows that parent-child dyadic synchrony plays an important role in facilitating the child's emotional competence. However, most of the aforementioned studies have been conducted with European American families and no studies have been found that have addressed dyadic constructs and their influence on the child's development among Mexican American families. Given the differences in childrearing values and beliefs, as well as the different social and contextual characteristics that surround many Mexican American families, it is important to understand what influence the dyadic interactions among mother-child, as well as its impact on the child's socio-emotional development. Therefore, the present study aims to examine the role that mother's childrearing beliefs, maternal parenting stress, socioeconomic status of the family, and mother's acculturation level can have on the mother-child dyadic synchrony, and in turn, in the child's socio-emotional competence.

CHAPTER III

METHODOLOGY

Research Questions

The study aims to address the following research questions:

1. A. How do maternal childrearing beliefs, maternal parenting stress, SES of the family and maternal acculturation level contribute to mother-child dyadic synchrony?
2. A. How do mother-child dyadic synchrony, maternal childrearing beliefs, maternal parenting stress, SES of the family and maternal acculturation level predict the child's socio-emotional competence?
3. A. Does mother-child dyadic synchrony mediate the relation between maternal childrearing beliefs, maternal parenting stress, SES of the family and maternal acculturation level and the child's socio-emotional competence?

By addressing these questions, this study hopes to fill current gaps in the literature on Mexican American families' socialization processes. First, it will contribute to the scarce literature examining mother-child interactions and its influence on the child's developmental trajectories among ethnic minorities. Second, by focusing on studying mother-child synchronous interactions during the toddlerhood period, it will add to the few research on synchrony-related phenomena that has been conducted with dyads beyond infancy (Harrist & Waugh, 2002). Third, by examining the relation of dyadic synchrony and children's socio-emotional competence when children reach the preschool years, it will also contribute to the limited number of studies that have followed

longitudinal designs for studying ethnic minority children and youth (Updegraff & Umaña-Taylor, 2010).

Participants and Procedures

The families included in this study were part of a larger longitudinal study examining connections between family characteristics and childcare choices among Mexican-American families. Only Mexican-American families who met the inclusion criteria were recruited (exclusions: multiple births, family expects to move from area within the year, child medical exclusions [Down Syndrome, Spina Bifida, Cerebral Palsy, Fetal Alcohol Syndrome, etc.], mother medical exclusions [visual and hearing impairments], adoption, father involved and not Mexican-American/Hispanic). Families were recruited from various community locations in the Lubbock area. Mothers were called within two-weeks after the initial recruitment to enroll in the study and schedule the first visit.

Participants for the present study were 80 Mexican-American families who were followed for a period of two years. Family data were collected during visits conducted in the families' homes. The first visits were conducted when children were 24 months old. Follow up visits were done when children were 36 and 48 months old. All data collectors were trained and certified before they were allowed in the field. At the beginning of each visit parents were provided with a consent form that explained the study, and the procedures to be used.

At the beginning of the 3-hr home visit when children were 24 months, parents participated in a two-part structured interview designed to gather family information that

the interviewer audio-taped for later transcribing. Following the interview, parents completed a variety of self-report instruments that assessed a wide range of issues of interest to the purpose of the longitudinal study.

Parent-child interaction data were also collected during the home visit. While one parent was completing survey instruments, the other parent was videotaped playing with their child in a 15-min interaction session. After the interaction session, the second parent was observed playing with their child. Order of mother-child and father-child interaction was counter balanced across families.

The parent-child interaction procedure consisted of a 15 min "three-bag" play session that was videotaped. At the start of the play session, parents were asked to sit on the floor with their child in view of the camera, but to try to ignore the camera. Parents were presented with three cloth bags. The first contained a toddler book containing pictures but no words titled "One frog too many", the second contained a puzzle, and the third contained a set of cooking toys. Parents were invited to play with their children as they wished, only using the toys from the three bags, but to start with Bag 1, move on to Bag 2, and finish with Bag 3. They were told that they could divide the 15 minutes as they liked. Beyond a time limit for the procedure, any structuring of the child's play and interaction with the child was left up to the parent. The procedure was designed to elicit a representation of interactions that may occur between parent and child and to highlight the parent's capacity to interact in a sensitive, warm, and stimulating manner with their child. Such a "diagnostic" procedure has been used in previous studies to describe

qualities of parent-toddler interaction (e.g., Belsky & Rovine, 1988; Cox, Owen, Henderson, & Margand, 1992).

Follow up visits were conducted when children were 36 and 48 months. During these visits, the same procedure as in visit one was followed to gather data on parent-child interaction. During these follow up visits, measures of children's adjustment were collected as well. After the visits, families were given $45 for participating. All interviews, videotaped interactions, and child assessments were completed in the family's primary language. Videotapes of mother-child and father-child play sessions were subsequently coded for a variety of parent and child interaction behaviors.

Measures

Demographic data. During interviews with the parents, information was gathered on marital status, number of fathers' and mothers' biological children, number of children living at home, parents' ages, race/ethnicity, years of education, employment status (not working vs. working), income, fathers' residency, and children's age and gender. For the current analyses, SES of the family was treated as *income to needs* measure (total household income divided by number of people living in the house).

Child temperament. During the first home visit (when children were 24 months) mothers completed the Child Behavior Questionnaire (CBQ; Rothbart, Ahadi, Hershey, & Fisher, 2001). The original version of the CBQ contains 195 items evaluated on a 7-point scale reflecting the relative frequency of specified child reactions in concrete situations in previous weeks. The scale comprises 15 subscales that can be organized around three latent constructs of temperament. The negative affectivity superconstruct

includes five subscales (Anger/ Frustration, Discomfort, Fear, Sadness, and Soothability), the extraversion superconstruct includes six subscales (High Intensity Pleasure, Impulsivity, Activity Level, Positive Anticipation, Smiling and Laughter, and Shyness), and the effortful control superconstruct includes four subscales (Attentional Focusing, Inhibitory Control, Low Intensity Pleasure, and Perceptual Sensitivity). Rothbart et al. (2001) reported internal consistency estimates for the CBQ scale ratings ranging from .64 to .92, with a mean of .73.

For the present study only three scales from the CBQ were used in order to capture the major dimensions of temperament of interest, and to limit the burden placed on parents in terms of completing questions. The three scales selected were (a) soothabilty, (b) impulsivity, and (c) inhibitory control. High scores indicate high levels of the particular temperament trait (i.e., high soothablity, high impulsivity, and high on inhibitory control). The internal consistency estimates (Cronbach's alphas) for the CBQ subscale ratings ranged from .65 to .90 (M =.79, SD = .07) in the maternal ratings. For the current analyses, child temperament was included as a control variable.

Beliefs about childrearing. Parents' beliefs about childrearing and education were measured using The Parental Modernity Scale of Child-rearing and Educational Beliefs (Schaefer & Edgerton, 1985). The 30 items of the questionnaire are scored on a five-point scale from 1 (Strongly agree) to 5 (Strongly disagree) yielding a total score and two subscale scores reflecting 1) beliefs favoring self-directed child behavior (child-centered) or *progressive beliefs* and 2) beliefs that child behavior should follow adult directives (adult-centered) or *traditional beliefs*. The total score was used for the current

analyses. Higher total scores indicated more child-centered or progressive beliefs (adult should support self-directed child behavior as opposed to child behavior should follow adult directives) about raising children. Schaefer and Edgerton (1985) reported internal consistency values that ranged from .88 to .94. In this study, internal consistency for the total scale was .82 for mothers' reports.

Maternal parenting stress. The 25-item Abidin Parenting Stress Index (PSI) was used to assess maternal parenting stress (Abidin, 1983). The PSI is designed to identify parent-child systems that are under stress and at risk for the development of dysfunctional parenting behaviors or behavior problems in the child involved. The Parenting Stress Index assesses parenting self-efficacy (e.g., "I often have the feeling that I cannot handle things very well"), role restriction (e.g., "I feel trapped by my responsibilities as a parent"), satisfaction with the parenting role reverse scored (e.g., "I enjoy being a parent"), and attachment to the infant (e.g., "I expected to have closer and warmer feelings for my baby than I do and this bothers me"). Items are answered on a 5-point Likert scale ranging from 1 (strongly disagree), to 5 (strongly agree). Higher scores represent greater parenting stress. The internal consistency for the PSI reported by Abidin (1995) was $\alpha = .95$.

For the present study three of the subscales of the PSI were used: Attachment, Restrictions of Role, and Sense of Competence. Cronbach's Alphas for the 3 subscales were Attachment = .50; Restrictions of Role = .79; and Sense of Competence = .73. The scores for the Attachment and Sense of Competence subscales were reversed, so that higher scores represented higher stress in each dimension (i.e., higher feelings of

detachment, and higher sense of incompetence). Furthermore, to reduce the number of variables in the regression analyses a composite score for mother's overall stress was created by averaging the scores of these three subscales. In this composite scale, higher scores represented higher levels of maternal stress.

Acculturation. The Cultural Awareness and Ethnic Loyalty questionnaire (Keefe & Padilla, 1987) was used to measure mothers' acculturation. This is a 136 item instrument, composed of eight subscales, designed to assess processes involved in cultural orientation and change among Mexican Americans. All items are scored in the direction of Mexican cultural awareness and ethnic identity. In this way, an item is coded so that a high score reflects awareness or loyalty to the Mexican culture. For example, a "no" response to the question "Do you speak Spanish?" is scored a 1, while a "yes" reply is scored a 2. For the converse item (i.e., "Do you speak English), a "yes" is given a score of 1, whereas a no is scored as 2. The range of scores varies across items, and some items represent a count (e.g., number of children who speak Spanish, age at which respondent moved to U.S. from Mexico). Keefe and Padilla (1987) found that the subscales making up the questionnaire have good internal reliability, α's ranged from .76 to .97. In the present study α's ranged from .68 to .88.

For the current analyses two of the eight subscales were used: 1) Language preference in personal and social situations, and 2) ethnicity of associates. The *language preference* subscale indicates whether the respondent prefers to use English or Spanish in personal situations as well as with other people (e.g., "What language is spoken at your family gatherings?"). Items are scored on a 5-point Likert scale with possible scores

ranging from 1 (Spanish only) to 5 (English only). Items were reversed scored so that higher values indicated higher use of Spanish. The *ethnicity of associates* subscale measures the social orientation of the respondent; whether he/she prefers to associate with Mexicans, Anglos or both (e.g., "At the present time, are your friends mostly of Mexican or Anglo descent?"). Items are scored on a 3-point scale with possible values of 1= Anglo/Other, 2= Both, 3=Mexican. Cronbach's alphas for language preference and ethnicity of associates subscales in this sample were .93 and .69, respectively.

Mother-child dyadic synchrony. Parent-child interaction was rated at 30-s intervals during the 15 min play session. For each 30-s segment of interaction, coders rated partners' synchrony on a five-point scale. Synchrony was defined as the harmony of the dyad, how smooth-flowing, coordinated and interdigitated the interaction is (e.g., smooth turn-taking or following the other's lead). Turn taking is characterized by a balance between partners in leading and following the action sequence. That is, one partner does not dominate the interaction. Possible scores ranged from 0 indicating no interaction between the partners (mother-child), to 5 indicating that partners were characterized as being sensitive, responsive, and contingent to one another' cues throughout the entire session. Ratings were averaged across intervals to establish a mother–child dyadic synchrony average score.

Children's socio-emotional competence. To assess children's socio-emotional competence, the primary caregiving parent completed the Preschool Socio-affective Profile (La Freniere, Dumas, Capuano, & Dubeau, 1992) when children were 48 months. The short form of the PSP contains 30 items designed to tap three areas of children's

emotional competence: (a) positive emotional behaviors with peers or social competence (e.g., "My child cooperates with other children" "My child comforts or assists another child in difficulty"), (b) angry, aggressive, and oppositional behaviors (e.g., "My child gets mad easily" "My child screams or yells easily"), and (c) anxious, isolated, and withdrawn behaviors (e.g., "My child is timid and afraid" "My child worries"). For each item, parents were asked to identify the frequency of the behavior for a particular child based on a 6-point Likert-type scale, ranging from (1) never to (6) always. Previous research (La Freniere et al., 1992) has shown the three factors of the PSP to be internally consistent (α = .92, .90, .85) and to have adequate 2-week test-retest reliability (.86, .82, .78). In the present study, internal consistency for the 3 factors of the PSP was .83, .86, and .79 (α for Social Competence, Anger-Aggression, and Anxiety-Withdrawal scales, respectively).

Demographics, as well as measures for child temperament, mother's childrearing beliefs, maternal parenting stress, acculturation measures, and mother-child dyadic synchrony were collected when children were 24 months. Child's social competence, anxiety, and aggressive behaviors were measured when children were 48 months.

Preliminary Analysis

Preliminary analysis included descriptive statistics for the study constructs and demographic variables (means, standard deviations, and ranges). Zero-order correlations among the study variables were conducted as well. Preliminary analyses were also used to check for the distribution of the variables and decide about possible transformations or selection of the appropriate statistics to be used in case of skewedness.

Plan of Analyses

To address question 1, a hierarchical multiple regression was conducted with dyadic synchrony as the dependent variable. Step 1 controlled for child temperament. In Step 2, family income, maternal education and mother's acculturation were introduced. In step 3, mother's childrearing beliefs and maternal parenting stress were entered. Variables were entered in this order to account for distal contextual factors relative to more proximal mother-child indicators.

To address question 2, a hierarchical multiple regression was conducted with the child's socio-emotional competence as the dependent variable. Step 1 of each regression controlled for child temperament. In Step 2, family income, maternal education and maternal acculturation were introduced. Maternal characteristics were entered in Step 3 (mothers' childrearing beliefs and maternal stress). Finally, dyadic synchrony was introduced in Step 4 to test for its unique contribution after statistically controlling for other variables.

To address question 3, dyadic synchrony was introduced in the last step of the second regression. This allowed determining if dyadic synchrony was mediating between more distal factors (family income, maternal education, mothers' acculturation level, mothers' childrearing beliefs, and maternal parenting stress) and child's socio-emotional competence.

CHAPTER IV

RESULTS

Preliminary Analyses

Descriptive statistics for demographics and study's variables are shown in Table 1. Twenty-six percent of mothers were single and had never been married, 51% were married, 3% lived with their partner, 10% were separated or divorced, and 1% was widowed. Mothers' average age was 25.7 years (SD = 5.9), and they had an average of 2.5 children in the home (SD = 1.2). Seventy-four percent of mothers were employed. Thirty percent of mothers did not complete high school, 24% had a high school education, 39% had some college, 6% had a bachelor's degree, and 1% had completed some graduate work or a master's degree. Families' incomes ranged from $8,500 to $87,000 per year (total of mother and father incomes). Forty-nine percent of the mothers had only 1 child. Fifty percent of the children (n = 39) were boys.

Eighty-four percent of the mothers were born in the United States and 10% were immigrants. Forty-four percent of the mothers identified themselves as Mexican Americans, and 15% identified themselves as Mexican and/or Chicanas. Forty-six percent of mothers stated they preferred to speak English only, 23% preferred to speak mostly in English, 27% reported they spoke Spanish and English about equally, and only 3% spoke only or mostly Spanish. Regarding the neighborhoods where the families lived, 37% of the mothers reported they lived in neighborhoods of mostly Mexican descent people, 44% lived in neighborhoods with both Mexicans and Anglos, and 10 % reported they lived in neighborhoods of mostly Anglo descent people.

Table 2 presents the correlations among the study's variables. Higher education of the mother was significantly associated with lower levels of maternal feelings of incompetence, and lower traditional childrearing beliefs. Higher SES was associated with lower maternal feelings of incompetence and less overall maternal parenting stress. Higher social orientation towards Mexican origin people was associated with higher levels of dyadic synchrony. Higher levels of mother-child dyadic synchrony were also significantly associated with more progressive childrearing beliefs, lower feelings of incompetence, and higher SES. Child's social competence was significantly associated with higher levels of mother-child dyadic synchrony, less parenting stress, higher SES, and higher maternal age. Child's anger/aggression was significantly associated with lower levels of mother-child dyadic synchrony.

Child's inhibitory control was not correlated with any of the study's constructs. Therefore, it was not included as a control variable in further analyses. The same happened with the language preference subscale of the acculturation measure, and so it was not included as a predictor in the regressions. Furthermore, child's anxiety at 48 months did not show any significant correlation with the hypothesized predictor variables; thus, it also was excluded from further analyses.

Gender differences were only observed for child's anger/aggression. Mothers reported that boys exhibited higher levels of aggression ($M = 2.7$, $SD = 1.3$) compared to girls ($M = 1.9$, $SD = 0.9$); $t\ (60.7) = 2.6$, $p < .05$.

Research Questions Testing

Research Question 1: In order to examine factors that contribute to mother-child synchrony a multiple hierarchical regression with dyadic synchrony as the dependent variable, temperament (impulsivity and soothability) as control variable, and family income, maternal education, maternal acculturation, maternal parenting stress, and mother's progressive childrearing beliefs as predictors was conducted.

Because family income appeared to be significantly correlated with many of the predictor variables and with dyadic synchrony, we decided to test for a mediating path. Therefore, it was hypothesized that maternal parenting stress and childrearing beliefs would mediate the relationship between family income and dyadic synchrony. To test for this mediation, maternal parenting stress and mother's childrearing beliefs were introduced in the last step of the regression with dyadic synchrony as the dependent variable.

When maternal education was introduced into the regression model it yielded a negative β coefficient, meaning that higher levels of dyadic synchrony were associated with fewer years of education. Since this was conceptually counter intuitive, we further explored the distribution of maternal education and dyadic synchrony using a scatter plot. Examination of the scatter plot revealed a curvilinear relation between these two variables. We then transformed maternal education into a categorical variable with four levels: *Less than high school*, *high school*, *less than a college diploma*, and *graduated from college or higher*. Then we plotted the group means of each category for dyadic synchrony. Again, the curvilinear association was observed: The average mean for dyadic

synchrony in the group with *less than high school* was *M*=2.82, *high school* group *M*= 2.69, *less than a college diploma M*= 2.56, and *graduated from college or higher M*= 3.10. Thus, in order to be able to include maternal education in the regressions, we created dummy variables for the four categories of maternal education using *less than high school* as the reference group for comparisons.

The final results for the regression with mother-child dyadic synchrony as the dependent variable are summarized in Table 3. As seen in the table, family's income made a significant contribution to predict dyadic synchrony $\beta = .31$, $t(68) = 2.41$, $p = .018$. Mothers with higher income levels exhibited higher levels of dyadic synchrony. Also, mothers who completed some college displayed significantly less synchrony *compared* to mothers who did not complete high school (β=-.38, $t(68) = -2.66$, $p = .010$). Other levels of maternal education did not make a significant contribution, meaning that the change in synchrony scores was not predicted by whether the mother had completed high school or had graduated from college, compared to whether the mother had not completed high school. Finally, when maternal parenting stress and mother's progressive childrearing beliefs were introduced into the model they did not make a significant contribution to predict dyadic synchrony. They also did not take out the effect of income and maternal education to predict dyadic synchrony. Thus, the hypothesized mediation of maternal parenting stress and mother's progressive childrearing beliefs was disconfirmed.

Research Questions 2 and 3: In order to examine factors that contribute to the child's socio-emotional competence (Research Question 2), two separate multiple hierarchical regressions were conducted: the first one with child's social competence as a

dependent variable, and the second with child's anger/aggression as the dependent variable. Also, to test whether dyadic synchrony mediated the relationship between family income, maternal education (dummy variables), maternal acculturation, maternal parenting stress, mother's progressive childrearing beliefs, and child socio-emotional competence (Research Question 3), dyadic synchrony was introduced in the last step of the regressions.

The regression results with child's social competence as the dependent variable are summarized in Table 4. None of the variables made a significant contribution to predict child's social competence. Contrary to expectations, synchrony not only did not make a significant contribution to predict child's social competence but also did not mediate the relationship between the other predictors and the child's social competence.

Finally, the regression results with child's anger-aggression as the dependent variable are shown in table 5. As seen in the table, only dyadic synchrony made a significant contribution to predict child's aggressive behaviors β = -.32, $t(53)$ = -2.13, p = .037. That is, higher levels of mother-child dyadic synchrony at 24 months predicted fewer aggressive behaviors when the child was 48 months.

Table 1. *Descriptive Statistics for Family Demographic Characteristics and Study Variables.*

	Mean	SD	Range
Demographics			
Mother's age	25.69	5.92	17 – 50
Mother's education	12.59	1.98	7 – 18
Adults living at home	2.63	1.13	1 – 6
Children living at home	2.50	1.21	1 – 6
Total household size	5.12	1.55	2 – 10
Family income/needs	6632	3145	1500 – 17400
Number of years in the US (mother)	25.77	5.68	17 – 50
Child temperament			
Soothability	5.11	0.63	3.00 – 6.42
Impulsivity	4.61	0.65	3.21 – 6.50
Inhibitory control	4.37	0.68	2.57 – 6.00
Maternal parenting stress			
Feelings of incompetence	2.12	0.53	1.10 – 3.30
Feelings of detachment	1.78	0.55	1.00 – 3.17
Role restriction	2.42	0.76	1.00 – 4.33
Overall stress	2.10	0.49	1.09 – 3.28
Maternal childrearing beliefs			
Progressive beliefs	27.41	3.69	19.00 – 35.00
Traditional beliefs	71.97	12.70	40.00 – 95.00
MA Cultural Orientation			
Preference for Spanish	1.84	0.68	1.00 – 4.33
Associate with MA	2.17	0.34	1.22 – 2.89
Mother-child synchrony	2.71	0.54	1.43 – 4.21
Child outcomes			
Social competence	3.91	0.86	1.50 – 5.60
Anxiety-withdrawal	2.44	0.80	1.20 – 5.00
Anger-aggression	2.34	1.21	1.00 – 5.80

Table 2. *Correlations between Demographics, Child Temperament, Maternal Parenting Stress, Maternal Childrearing Beliefs, Maternal Acculturation and Child's Socio-Emotional Competence.*

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Demographics																
1. Mother's age (T1)	.16	.22	.06	.07	-.10	-.10	-.11	-.04	-.09	.18	.35**	-.02	.08	.30*	-.06	-.18
2. Mother's education (T1)	1	.37**	-.05	-.26*	.05	-.24*	-.17	-.07	-.18	.52**	-.12	.06	-.04	-.02	.19	.03
3. Income to needs (T1)		1	.20	-.03	.14	-.37**	-.18	-.18	-.29**	.09	.16	-.17	.33**	.40**	-.04	-.18
Child Temperament																
4. Soothability (T1)			1	.19	.29**	-.11	-.06	-.17	-.15	-.03	.02	-.15	.14	.20	-.15	-.26*
5. Impulsivity (T1)				1	-.38**	.09	.05	.16	.13	-.26*	.11	.10	-.13	.03	.06	.02
6. Inhibitory control (T1)					1	-.05	-.17	-.21	-.19	-.03	-.09	-.17	.05	-.05	-.04	.14
Maternal Parenting Stress																
7. Feelings of incompetence (T1)						1	.33**	.35**	.66**	-.22*	.04	.05	-.26*	-.24	.05	.24
8. Feelings of detachment (T1)							1	.65**	.83**	-.25*	-.02	.08	-.14	-.22	.06	-.01
9. Restriction of role (T1)								1	.88**	-.26*	.07	.01	-.11	-.16	.13	.08
10. Overall stress (T1)									1	-.30**	.05	.05	-.20	-.25*	.11	.12
11. Maternal progressive childrearing beliefs (T1)										1	.00	.07	.11	.11	.01	-.06
Acculturation																
12. Spanish preference (T1)											1	.18	.06	.11	.04	-.13
13. Associate with MA (T1)												1	-.30**	-.23	.02	.10
14. Mother-child synchrony (T1)													1	.36**	-.09	-.36**
Child's Outcomes																
15. Social competence (T2)														1	-.51**	-.52**
16. Anxiety (T2)															1	.14
17. Aggression (T2)																1

Note: T1 = Time 1 at 24 months; T2 = Time 2 at 48 months
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. *Hierarchical Multiple Regression for Predictors of Mother-Child Dyadic Synchrony at 24 Months (N=78).*

	Step 1				**Step 2**				**Step 3**			
	B	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***
Impulsivity	-0.13	0.09	-.16	.161	-0.12	0.09	-.14	.198	-0.08	0.09	-.10	.376
Soothability	0.15	0.10	.17	.134	0.07	0.10	.08	.479	0.05	0.10	.06	.623
Income/Needs					0.00	0.00	.31*	.015	0.00	0.00	.31*	.018
No High School vs. High School					-0.13	0.16	-.10	.414	-0.14	0.16	-.11	.377
No High School vs. Some College					-0.31	0.14	-.28*	.036	-0.41	0.16	-.38*	.010
No High School vs. College or Higher					-0.11	0.26	-.05	.673	-0.26	0.28	-.13	.354
Ethnicity associates					-0.28	0.18	-.17	.127	-0.29	0.18	-.18	.105
Maternal parenting stress									-0.11	0.13	-.10	.389
Progressive childrearing beliefs									0.01	0.01	.18	.166
Total R^2		.05				.24**				.27**		
Df		(2, 75)				(7, 70)				(9, 68)		
p		.171				.007				.007		
Δ R^2		.05				.19**				.04		
Df		(2, 75)				(5, 70)				(2, 68)		
p		.171				.008				.174		

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

Table 4. *Hierarchical Multiple Regression for Predictors of Child Social Competence at 48 Months (N=64).*

	Step 1				**Step 2**				**Step 3**				**Step 4**			
	B	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***
Impulsivity	-0.3	0.16	-.02	.865	0.00	0.16	.00	.990	0.06	0.16	.05	.716	0.08	0.16	.07	.617
Soothability	0.28	0.17	.21	.113	0.12	0.17	.09	.498	0.08	0.17	.06	.634	0.07	0.17	.05	.702
Income/Needs					0.00	0.00	.40**	.008	0.00	0.00	.37*	.014	0.00	0.00	.31	.053
No High School vs. High School					-0.22	0.30	-.11	.458	-0.23	0.30	-.12	.443	-0.20	0.30	-.10	.502
No High School vs. Some College					-0.30	0.27	-.17	.275	-0.47	0.29	-.27	.114	-0.38	0.30	-.22	.212
No High School vs. College or Higher					-0.41	0.45	-.14	.364	-0.63	0.48	-.21	.202	-0.56	0.49	-.19	.259
Ethnicity associates					-0.33	0.31	-.14	.288	-0.35	0.31	-.14	.266	-0.28	0.31	-.11	.380
Maternal parenting stress									-0.24	0.24	-.13	.322	-0.24	0.24	-.13	.334
Progressive childrearing beliefs									0.01	0.01	.17	.249	0.01	0.01	.14	.345
Dyadic Synchrony													0.25	0.21	.16	.254
Total R^2		.04				.21				.25				.27		
Df		(2, 61)				(7, 56)				(9, 54)				(10, 53)		
p		.276				.052				.053				.055		
Δ R^2		.04				.17*				.04				.02		
Df		(2, 61)				(5, 56)				(2, 54)				(1, 53)		
p		.276				.046				.239				.254		

** p < .05, ** p < .01, *** p < .001*

Table 5. *Hierarchical Multiple Regression for predictors of Child's Anger/Aggression at 48 Months (N=64).*

	Step 1				**Step 2**				**Step 3**				**Step 4**			
	B	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***	***B***	***SE B***	***β***	***p***
Impulsivity	0.15	0.22	.08	.517	0.13	0.24	.07	.583	0.09	0.25	.05	.710	0.03	0.24	.02	.899
Soothability	-0.54	0.24	-.28*	.031	-0.45	0.26	-.24	.091	-0.43	0.27	-.22	.118	-0.38	0.26	-.20	.150
Income/Needs					-0.00	0.00	-.14	.368	-0.00	0.00	-.13	.427	-0.00	0.00	-.01	.978
No High School vs. High School					-0.20	0.44	-.07	.648	-0.20	0.46	-.07	.673	-0.28	0.45	-.10	.541
No High School vs. Some College					0.22	0.40	.09	.594	0.34	0.45	.14	.457	0.09	0.45	.04	.840
No High School vs. College or Higher					0.10	0.67	.02	.885	0.25	0.75	.06	.741	0.05	0.72	.01	.943
Ethnicity associates					0.10	0.47	.03	.836	0.11	0.47	.03	.823	-0.09	0.47	-.02	.856
Maternal Parenting Stress									0.17	0.37	.07	.658	0.15	0.36	.06	.678
Progressive childrearing beliefs									-0.01	0.01	-.08	.603	-0.00	0.01	-.03	.871
Dyadic Synchrony													-0.68	0.32	-.32*	.037
Total R^2		.08				.11				.12				.19		
Df		(2, 61)				(7, 56)				(9, 54)				(10, 53)		
p		.094				.481				.635				.310		
Δ R^2		.08				.03				.01				.07*		
Df		(2, 61)				(5, 56)				(2, 54)				(1, 53)		
p		.094				.856				.746				.037		

** p < .05, ** p < .01, *** p < .001*

CHAPTER V

DISCUSSION

Guided by ecological theories (Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006; Garcia-Coll et al., 1996), as well as family systems theory (Cox & Paley, 2003; Whitchurch & Constantine, 1993), this study explored how multiple factors from different levels of analyses contribute to mother-child dyadic synchrony, and to the child's socio-emotional competence among Mexican American families. Specifically, this study examined the association of proximal factors (e.g. maternal parenting stress, mother's childrearing beliefs) as well as more distal factors (e.g. family income, maternal education and acculturation level) with mother-child synchrony when children were 24 months old, and how these predict the child's later social and emotional competence at 48 months.

Regarding the factors that contribute to mother-child dyadic synchrony, only family income emerged as a significant predictor; mother-child dyads in families with higher SES displayed significantly higher levels of dyadic synchrony. Furthermore, this effect remained significant even after introducing other factors to the model such as maternal education, maternal parenting stress, and mother's childrearing beliefs. Therefore, the results from the present study indicate that having higher SES is beneficial to mother-child dyadic synchrony. This finding supports the results found by Deater-Deckard and O'Connor (2001) among British families from both urban and rural areas, where greater dyadic synchrony was associated with higher SES.

Although no other studies were found bearing specifically on the influence of SES in mother-child dyadic synchrony, some indirect evidence does exists that supports the influence of SES on mother-child interaction. The effect of SES on the parent-child relationship has been mostly understood through the influence that economic conditions have on the parents' wellbeing and how this in turn affects the mother's relationship with her child. For instance, literature suggest that families living in adverse economic conditions face more psychological stressors which make it more difficult for the parents to support and manage their children's emotional needs (Eisenberg, 1998; NICHD Early Childcare Research Network, 2004). This is consistent with family systems theory (Cox & Paley, 2003; Whitchurch & Constantine, 1993) and Bronfenbrenner's ecological model (1977, 2006), which suggest that broader factors that influence the parent also can affect the dynamics between parents and children.

Furthermore, stress due to economic pressures may be associated with inconsistent and harsh parenting practices, diminished quality of the parent-child relationship, and less access to the parent (Eisenberg, 1998; Guajardo, Snyder, & Peterson, 2009). As a consequence, children's abilities to regulate emotion and behavior are likely reduced, and they are more prone to behavioral problems, including the experience of internalizing and externalizing emotional reactions (Eisenberg, 1998).

Despite the existing evidence that support the mediational role of parenting stress and parenting practices between SES and the quality of parent-child interaction (Eisenberg, 1998; Guajardo et al., 2009; NICHD Early Childcare Research Network, 2004), the present study did not find support for such mediational path. Parenting stress

and parent childrearing beliefs did not mediate the relation between SES and mother-child interaction (dyadic synchrony).

There are several possible explanations for why we did not find a mediational path between SES and mother-child dyadic synchrony. First of all, there might be other processes that are intervening in this relation that were not measured in the present study, for example, the quality of the home environment. In this matter, it might be that higher SES contributes to a better home environment, which in turn facilitates better interactions between mother and the child (Evans, 2004). Furthermore, higher SES might facilitate access to other resources outside the family, that can contribute to both mother and child well-being (e.g., high quality childcare, extracurricular activities, etc.).

Another possibility why parental stress and parenting childrearing beliefs did not mediate the relationship between SES and dyadic synchrony could be due to measurement limitations. The scales used to capture these processes (Parental Modernity Scale of Childrearing and Educational Beliefs [Shaefer & Edgerton, 1985] and The Parenting Stress Index [Abidin, 1983]) where not developed with Latino participants. The Parental Modernity Scale was developed with White and African American parents, and the Parenting Stress Index was developed in a mostly White sample (76%). Thus, the scales might not be sensitively capturing these processes among Mexican American parents. This is a common limitation reported with studies that have used instruments developed for a majority White population with Mexican American families (Domenech-Rodríguez, Donovick, & Crowley, 2009).

However, the significant contribution of SES to predict dyadic synchrony cannot be overlooked. As suggested by Evans (2004) recent studies on public health, medicine, and psychology have come to appreciate the value of studying the effects of SES in its own right. According to Evans, the answer to why poverty is harmful probably does not lie with any other underlying agent or process. Families living in poverty face an array of suboptimal psychosocial and physical conditions that present cumulative risk exposure to the developing child (Evans, 2004).

In his review of scholarship that has evaluated the influence of income-related physical and psychosocial childhood risk factors, Evans (2004) suggests that poverty is harmful to the physical, socio-emotional, and cognitive wellbeing of children and their families. Compared with middle and high-income children, low-income children suffer greater family conflict and violence. They also have parents that are more nonresponsive and harsh, and they live in households with fewer routines, less structure, and greater instability. Furthermore, low-income children have fewer cognitive enrichment opportunities both at home and in their neighborhoods. They also tend to live in more unhealthy environments and in neighborhoods with poorer services and more physically deteriorated. Finally, low-income children are more likely to attend schools and day care facilities that are inadequate (Evans, 2004).

The results from the present study raise awareness of the importance of studying the effects of income on the child's physical and psychosocial environments, moving away from a focus of treating income as a control variable (Evans, 2004). Furthermore, this becomes of special importance when studying Mexican Americans because as the

Census Bureau and research suggest, Mexican American families in the United States earn lower wages compared to Anglo families, have lower levels of educational achievement, and have fewer economic resources available to support their childrearing efforts (Cauce & Domenech-Rodriguez, 2002; Martinez, 2001; U.S. Bureau of the Census, 2010). In this particular sample, family incomes (sum of mother and father's incomes) ranged from 8,500 to 87,000 per year (M= 32,175; SD= 14,477). This wide range allowed us to account for the effects that income can have on mother-child interactions.

Regarding maternal education, only mothers that had some college, but did not complete this degree, showed significantly lower levels of dyadic synchrony. Perhaps dropping out of college adds economic and social stressors to these mothers, which can affect their well-being and in turn their relationship with the child. Interestingly, this group also reported higher levels of ethnic social orientation, preferring to associate more with Mexican Americans. It is possible that these mothers turn towards people from their cultural background in search for emotional and other types of support as a result of not completing their higher education which is the expectation in mainstream society. However, more research is needed that can address these assumptions and shed light on the impact that dropping out of college has on these mother's well-being as well as how it affects their relationships with their children.

Another factor that did not make a significant contribution to predict dyadic synchrony or any of the child's outcomes was maternal acculturation (measured by mothers' language preference and ethnicity of associates). Although ethnicity of

associates initially showed a significant negative correlation with dyadic synchrony, when other variables were introduced into the model this association disappeared. Furthermore, ethnicity of associates and language preference were not associated with any other of the study variables.

According to Keefe and Padilla (1987), language preference and ethnicity of associates measure two distinct yet related dimensions in the process of cultural change. Language preference is part of the *Cultural Awareness* dimension, which relates to the knowledge and practice of cultural traits (Keefe & Padilla, 1987). Ethnicity of associates is part of the *Ethnic Social Orientation* dimension, which reflects the preference for ethnicity of associates and types of foods. Because in this study's sample 84% percent of the mothers were born in the United States, it make sense that preference for using Spanish language was low and did not show any significant association with the other variables. Earlier research with Mexican Americans in this region of the country has shown that language use is not a sensitive measure of acculturation for Hispanics in West Texas (Caldera, Robitschek, Frame, & Pannell, 2003). According to Caldera et al. (2003) West Texas has a history of discrimination against Spanish speaking individuals that have limited exposure to the Spanish language among this group. However, according to Keefe and Padilla (1987), Mexican Americans who do not speak Spanish may still identify with their Mexican heritage and chose to associate with people from their same ethnic background. That is why we included ethnicity of associates as a measure of cultural change.

The lack of associations of these two measures (language preference and ethnicity of associates) to the study variables may indicate that for this group, there are other dimensions of acculturation (e.g., cultural identification, ethnic pride, cultural heritage) that can better portrait the processes of cultural orientation and change, but were not used for the current analyses. Therefore, this limitation could be addressed in future studies using measures of acculturation that can give a better depiction of processes of cultural change among Mexican American groups. The lack of association of these variables to the study's constructs may also be indicative of what García Coll et al. (1996) conceptualized as "adaptive cultures". This idea refers to how ethnic minority families can negotiate or change their cultural legacies and traditions in response to current contextual demands (García Coll et al., 1996).

Given the interdependent orientation (Greenfield, 1994) and close-knit nature of Mexican American families (Caldera et al., 2003), it was expected to find higher mean levels of mother-child dyadic synchrony in this sample. However, the mean for dyadic synchrony was 2.71 (*SD*= 0.54); a value very similar to the one reported in Lindsey et al.'s (2009) study (*M*=2.62; *SD*= 0.75). These authors followed a similar procedure to measure dyadic synchrony with a majority of White middle-class families. Therefore, it seems that for Mexican American families there are other relationship qualities that might be better indicators of their interdependent orientation. Future studies would benefit from including measures of cultural values and how these relate and are evidenced in mother-child interactions.

Findings from the present study provide supporting evidence to studies that have linked parent-child synchronous interactions to better child's emotional competence (Colwell, 2000; Dunham & Dunham, 1995; Garcia-Sellers & Church, 2000; Harrist et al., 1994; Harrist & Waugh, 2002; Mizze & Pettit, 1997; Raver, 1996, Vizziello et al., 2000). In the present study, higher levels of dyadic synchrony at 24 months significantly predicted fewer aggressive behaviors in the child at 48 months. To our knowledge, this is the first study that has found support for this association among Mexican American families.

An explanation for how better synchronous interactions predict less aggressive behaviors in children comes from the Social Contingency Model (Dunham & Dunham, 1995). This model posits that episodes of contingent and reciprocating interactions are an optimal form of social stimulation for various aspects in the child's development. Specifically, during toddlerhood, socially contingent interactions with parents provide the child with important self-regulatory skills that help the child regulate his/her emotions (Raver, 1996). In turn, better capacities for emotion regulation during toddlerhood are predictive of less internalizing and externalizing problems in the preschool and childhood years (Thompson & Goodvin, 2007).

As suggested by Thompson and Goodvin (2007) the quality of the parent-child relationship provides a resource of support that influences the child's capacities to manage their feelings. Thus, synchrony as a measure of quality of the parent-child relationship (Mize & Pettit, 1997) could provide sensitive support to the child to develop more adaptive approaches to manage emotions. On the contrary, non-supportive,

conflictual parent-child relationships are related to children's expression of anger and hostility (Eisenberg, 1998).

Other authors suggest that dyadic synchrony contributes to the child's emotional competence by providing an opportunity for children to practice and experience sensitive behavioral and emotional mirroring with a partner (Harrist et al., 1994). Thus, a positively synchronous interaction can serve as an optimal context for social learning (Harrist et al., 1994). Synchronous interactions give the child the opportunity to practice compliance in a non-coercive mutually compliant system that allows the child practice in self-regulation (Harrist & Waugh, 2002). As children become more self-regulated in interactions with caregivers, they also become more self-regulated away from caregivers, and this facilitates their interactions with peers and others (Harrist & Waugh, 2002).

One unexpected finding in the present study was the lack of association between dyadic synchrony and child's social competence. In this matter, other studies have found that dyadic synchrony is also associated with the child's social competence (Harrist et al., 1994; Vizziello et al., 2000). These studies suggest that in synchronous interactions children learn how to respond contingently and pace interactions appropriately (Harrist et al., 1994), and become more open to new relations with others (Vizziello et al., 2000). In the present study, synchrony showed a significant bivariate correlation with child's social competence (i.e., higher levels of dyadic synchrony were associated with higher child's social competence). However, after statistically controlling for other variables, synchrony did not have a unique contribution to predict child's social competence.

Eisenberg (1998) suggests that the relation between the quality of the parent-child relationship and children's socio-emotional competence is complex. According to Eisenberg, supportive parent-child interactions may enhance social functioning only when combined with other socialization practices or influences that shape important relevant capacities. Therefore, it is likely that in the families from this study, there are other socialization practices that are contributing to predict the child's social competence which were not measured in this study. Thus, more studies are needed that can help elucidate the mechanisms that contribute to predict child's social competence in Mexican American families.

Interestingly, in the present study temperament did not emerge as a significant predictor to the child's social and emotional competence, nor did it make a contribution to predict dyadic synchrony. In this matter, temperament scholars have proposed that the parameters of future emotional functioning are often unfolding out of early temperamental predispositions (Kochanska, 2001). For instance, studies have found that high levels of negative affect, impulsivity, and irritability in infancy and toddlerhood predict later behavioral problems (NICHD Early Childcare Research Network, 2004). However, other studies suggest that this relationship is not always clear and direct.

Data from a national level study (NICHD Early Childcare Research Network, 2004) evaluated the antecedents of children's early affective disregulation within the mother child relationship. Findings showed that affective disregulated toddlers and preschoolers were not identified by their mothers as more temperamentally difficult than were children who exhibited no disregulation. Only maternal sensitivity and stimulation,

child's cognitive development, and insecure/avoidant attachment were associated with affect disregulation. Therefore, these authors suggest that it is not so much the child or even maternal affective characteristics that are most predictive of the child's outcomes; it is the relationship qualities to which both partners contribute and which are best captured at the dyadic level (NICHD Early Childcare Research Network, 2004).

Results from the present study add supporting evidence to this premise. In our study, only dyadic synchrony was predictive of the child's emotional competence (less aggressive behaviors). However, this result should be interpreted carefully as the interaction between child characteristics and maternal behavior is often complex and may involve other mechanisms that contribute to predict children's emotional outcomes. Nonetheless, this result is significant as it adds support to the notion of the importance of early relationships in shaping future emotional functioning (Eisenberg, 1998; Thomson & Goodvin, 2007).

Despite the evidence for the importance of dyadic synchrony in child's emotional competence found in this study, some limitations must be noted. Firstly, this study was primarily exploratory and the results must be interpreted with caution. Due to the limited sample size and the fact that the sample was selected from one particular region in the country, the conclusions derived from the study can only be generalized to Mexican Americans in West Texas. Furthermore, in this study there were some marginal findings (e.g., the contribution of family income to predict child's social competence) that a larger sample size might have been able to detect as significant. Therefore, future studies with larger samples might help shed light on the factors that contribute to synchronous

interactions and children's social competence in Mexican American families. Secondly, some of the measures that were used in the study have not been validated for Mexican Americans. Thus, the measures might not be effectively capturing some of the processes within these families. More than just translating the instruments, it is important that future research can address whether the measures are appropriately capturing the essence of the processes being measured and the significance that these processes have for this particular group. Thirdly, the results of the present study are also limited because the child outcome measures and maternal characteristics measures were mostly based on maternal reports. Perhaps if the child outcome measures had been based on observation or third party reports the study would have yielded different findings.

However, this study presents its own strengths. First, this is one of the few studies that has attempted to evaluate the construct of dyadic synchrony and its associations to the child's socio-emotional competence with an ethnic minority group. In this matter, the findings of this study support previous associations that have been found with majority groups. Therefore, this might indicate that the process of dyadic synchrony and its contribution to the child's emotional competence is a universal experience, although it might vary in its expressions and manifestations. Second, the use of observational procedures that were used to evaluate mother-child interactions allowed to better capture the process under study, avoiding possible gaps between concepts and observable parent and child behavior.

Results from this study also raise awareness of the importance of more public investment in Mexican American Families. As found in this study, mother's economic

and educational disadvantages have a negative impact on mother-child synchronous interactions, which in turn affect the child's development. Thus, more policies are needed that can help prepare Mexican American mothers for higher education, as well as helping them overcome the barriers they find to succeed in college. Increasing educational achievement in these mothers might allow them to obtain better economic resources to support their childrearing efforts. Also, less economic pressures can help mothers spend more quality time with their children.

In conclusion, this study provides evidence of the importance of taking a dyadic approach to understand parent-child interaction and its impact on the child's development as suggested by family systems theory (Cox & Paley, 2003). The link found between dyadic synchrony and children's adjustment outcomes in this study support arguments that contingent and mutually-responsive interactions between parent and child set the stage for optimal patterns of development (Colwell, 2000; Dunham & Dunham, 1995; Garcia-Sellers & Church, 2000; Harrist et al., 1994; Harrist & Waugh, 2002; Kochanska, 1997; Kochanska & Murray, 2000; Lindsey et al., 2009; Mizze & Pettit, 1997; Raver, 1996; Vizziello et al., 2000). Furthermore, this study raises awareness of the importance of considering multiple levels of analyses (Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006) to understand parent-child interactions and child development. In this matter, the present study found that distal factors, such as SES, also have an important impact on the mother-child interaction. Therefore, this study set the stage for future research that can continue to explore the processes that contribute to our understanding of

the dynamics of the mother-child relationship and how these influence the child's development among Mexican American families.

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