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VARIABLES ASSOCIATED WITH ATTACHMENT SECURITY AND

INDISCRIMINATE FRIENDLINESS IN CHINESE ADOPTED CHILDREN IN THE U.S.

A Dissertation in

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ABSTRACT

The study investigated relationships between important variables and attachment security and indiscriminate friendliness presented by children adopted from China. The role of children's age when adopted, children's institutionalization experience prior to adoption, time spent with adoptive families, and parenting styles of adoptive parents were examined in predicting attachment security and indiscriminate friendliness respectively. Correlation between attachment security and indiscriminate friendliness was also checked to better understand relationship between the two constructs. Participants were 92 U.S. parents with children adopted from China (Means for children's age were19-month-old when adopted and currently 80-month-old, or 6.5 years old). Results partially supported the hypotheses of the study. Higher attachment security scores were associated with higher level of authoritative parenting and lower level of permissive parenting as self-rated by parents (p < .01). Positive institutionalization experience children had prior to adoption was associated with better attachment security presented by children at a marginally significance level (p = .09). Children's positive institutionalization experience prior to adoption predicted lower level of indiscriminate friendliness in children (p < .05). However, increase of time that children spent with adoptive families was not accompanied by a decrease in indiscriminate friendliness presented by adoptees at a marginally significance level (p = .05). No correlation between attachment security and indiscriminate friendliness was detected. Results of the study provide practical implications for adoptive parents with children from China and professional counselors working with parents and adoptees. The study also offers evidences for counseling practices in cultivating secure attachment and understanding/addressing indiscriminate friendliness in adoptees. It sheds lights on future research pertaining development of the population.

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CHAPTER 1

INTRODUCTION

International adoption involves transferring children from a country of origin to a host country. It involves the process where adoptive parents and adopted children meet across lines of differences in biology, race, cultural heritage, nationality, socio-economic status, and more (Bartholet, 2005). World circumstances of war, poverty, and/or lack of social welfare have created multiple scenarios where sending countries provide U.S. couples with parenting opportunities that have been reduced in the U.S because of increasing infertility rates and difficulties associated with domestic adoption (Lee, 2003). These increases in international adoptions have produced a situation of global significance and local importance for related countries, societies, as well as communities (Hoshman, Gere, & Wong, 2006). International adoptees were mainly adopted from Korea in 1990s from foster environment (Welsh & Viana, 2012), and more countries of origin were involved since then including China, Russia, Romania, Ukraine, and Guatemala (United States Department of State, 2011 & 2012).

According to the statistics of the United States Department of State (2014), nearly 250,000 children were adopted to the United States between 1999 and 2013 from other countries of origin, among which China was listed as the largest sending country, accounting for around one-third of the international adoptions by U.S. citizens. The large proportion of Chinese adoptions is significant, but just as important is the fact that adoption outcomes seem to be more positive for this group than international adoptions from other countries (Cohen & Farnia, 2010; Cohen, Lojkasek, Zedeh, Pugliese, & Kiefer, 2008; Tan & Marfo, 2006; Tan, Camras, Deng, Zhang, & Lu, 2012). Optimal post-adoption adjustment outcomes in Chinese adoptees provide a large and significant source of potential information on what makes an international adoption

successful and consequently, what professional counselors and families can do to facilitate success among all international adoptees.

Intensive research has been conducted on post-adoption adjustment issues such as physical development (e.g., Kreider & Cohen 2009; Miller & Hendrie, 2000), behavioral adjustment (Hawk & McCall, 2010; Merz & McCall, 2010; O'Connor & Rutter, 2000), cultural identity/socialization issues (Lee, 2003; Lee, Grotevant, Hellerstedt, Gunnar, & The Minnesota International Adoption Project Team, 2006), and social-emotional development (Cohen & Farnia, 2011) of internationally adopted children (IA children). Less attention has been directed to child-parent attachment in current literature on IA children and U.S. families, and very little information was found addressing child-parent attachment and its development process between Chinese adopted children and their adoptive parents in the U.S., while it plays a significant role in children's later development (Bowlby, 1973).

Attachment is viewed as an organizational construct rather than a static trait (Bowlby, 1951 & 1953; Sroufe & Waters, 1977), with which dependency on their caregivers is a core part of the organizational construct. Sroufe and Waters (1977, p.3) defined attachment as "an affective tie between infant and caregiver and to a behavioral system". It is influenced by specific context versus stays static. Attachment is "a salient issue given its clear centrality to infant functioning and subsequent development." (Sroufe, Egeland, Carlson, & Collins, 2005, p. 42). To concretize the child-parent attachment pattern, Fitton (2008) listed symbols of children's behaviors through which they use to show secure (e.g., smiling, waving, laughing) or insecure relationship (e.g., screaming, crying, kicking) with parents.

The importance of attachment makes it a main source for some of children's later behavioral and socioemotional problems according to Bowlby (1973). Secure attachment to

adoptive parents in the early stage after adoption significantly predicts positive social development in adolescence or middle childhood of adoptees (Stams et al., 2002). Given the abstract and complex nature of attachment, it makes more sense to study the core components of attachment such as security/quality of an attachment relationship (Ainsworth, 1978) or attachment behaviors than to look at "attachment" as a general construct (Sroufe & Waters, 1977). According to attachment theory, this study examines attachment security in Chinese adoptees, as a reflection of the attachment relationship with their adoptive parents. Children with secure attachment seek comfort from parents and feel secure about their environment, whereas children lacking of secure attachment with caregivers are reluctant to seek comfort and usually show difficulties adjusting to their environment (Sroufe et al., 2005).

Along with the attachment between adoptees and adoptive parents, indiscriminate friendliness is another behavior that has been examined in adoption literature. Indiscriminate friendliness refers to children's affection and friendliness toward all adults including strangers without a sense of fear or caution which is expected to be demonstrated in children at the developmental stage (Tizard, 1977). Early studies by Chisholm, Carter, Ames, and Morison (1995) and Chisholm (1998) showed that children adopted from Romanian orphanages showed significantly more indiscriminately friendly behaviors than their non-adopted peers. Although indiscriminate friendliness was viewed as a form of disorganized attachment (O'Connor, Rutter, & The English and Romanian Adoptees Study Team, 2000), it was treated by some other researchers as an independent behavioral issue presented by adoptees (Chisholm et al., 1995 & 1998; van den Dries, Juffer, van IJzendoorn, Bakermans-Kraneburg, & Alink, 2012; Zeanah, Smyke, & Dumitrescu, 2002). It is thus treated as a separate dependent variable from attachment in this study. Attention has been directed to whether or not institutionalized adoptees presented

with more indiscriminately friendly behaviors than fostered adoptees or non-adopted children (e.g., Chisholm et al., 1995 & 1998; van den Dries et al., 2012), but research gap still exists in current literature regarding which variables which be related to indiscriminate friendliness, and whether the findings of IA children are applicable to children adopted from China. Variables (e.g., children's institutionalization experience, attachment related behaviors, inhibitory control ability) were studied in current literature with children mainly from Romanian institutions and fostered children. There is a scarcity of information found about indiscriminate friendliness patterns in Chinese adoptees.

The Statement of Problem

The study is designed to examine important variables potentially associated with attachment security and indiscriminate friendliness in Chinese adoptees. Chinese adoptees are selected first because there is little information on this population related to the issues. Chinese adoptees are also unique in that they tend to have better outcomes than IA children as a group (Cohen & Farnia, 2010; Cohen et al., 2008; Tan et al., 2012), making it worthwhile to explore variables that may relate to the differences. Children involved in the study were under 24 months (two years old) at the time of arrival, because the first few years of infants are proved to be the most critical for the development of secure attachment with parents according to the attachment theory (Bowlby, 1951, 1953), and a majority of Chinese adoptees were under two-year-old when adopted (U.S. Department of State, 2011; 2013; & 2014). Mohanty and Newhill (2005) suggested that there is a lack of research in current literature that focuses on Chinese adoptees, while there is more focused on the attachment outcomes of adopted children in countries other than U.S., and there is a lack of research on variables related to attachment development in U.S. adoptive families with IA children.

Needs of the Proposed Population. The U.S. Department of State (2014) reported that 249,694 children were adopted to the U.S. from other countries between 1999 and 2013, and China ranked first among all countries of origin. Chinese adoptees under 24 months counted a huge majority of the Chinese population ($\approx 87\%$) with 36% under one year old and 51% between one and two years old when adopted. Studying Chinese adopted children and their adoptive U.S. families has become an important topic in counseling, as they compose a major part of international adoption in the U.S. and their adjustment outcome and overall optimal post-adoption development offer insights for professional counselors working with adoptive families and children (Cohen & Farnia, 2010 & 2011; Cohen et al. 2008; Tan & Marfo, 2006; Tan et al., 2012).

This study is designed to examine important variables derived from literature and their relationships with attachment security in Chinese adoptees. In addition, it assesses the relationships between the variables and indiscriminately friendly behaviors presented by children in this study. Findings yielded can be resources for counseling professionals working with adoptive families with Chinese adoptees, as Hoshman et al. (2006) proposed that the trend of intercountry adoption from China indicated needs of psychoeducation and other counseling programs for current and future adoptive families. Bowlby (1973) noted that children experienced physical, social, and emotional losses and sufferings after separated from their primary caregivers. This can be applied to Chinese adoptees who experienced the separation from birth parents along with the cultural layer of impact on their later attachment development. Attachment is a complex subject, and the attachment development of IA children can be affected by multiple variables. Levy and Orlans (2000) suggested that various reasons need to be considered in studying insecure attachment of these children, for example, pre-adoption

conditions that the child had experienced, pre-adoption attachment patterns, parenting or caring that the children received before and after adoption and so forth.

Research Gap. A few studies (e.g., Cohen & Farnia, 2010; Cohen et al.; Tan & Marfo, 2006; Tan et al., 2012) focused on post-adoption adjustment of children adopted from China, all of which indicated optimal outcomes in these children after six month, one year, or a longer period of time since adoption. They gained rapid development in attachment, as well as physical, linguistic, and cognitive growths after six months since adoption (Cohen et al., 2008). Little was known about the relationship between attachment outcome and adoptees' age at time of adoption (Rojewski, Shaprio, & Shapiro, 2000). Despite the studies conducted on Chinese adoptees, current literature contains very limited amount of knowledge about post-adoption attachment of Chinese adoptees in the U.S. in comparison with adoptees from other western and European countries. Few studies specifically focused on attachment in children adopted from China and their adoptive families in the U.S. Two studies (Cohen & Farnia, 2010; Pugliese, Cohen, Farnia, & Lojkasek, 2010) briefly compared attachment behaviors between Chinese adoptees and children adopted from other countries in Canada, yet no study in current literature was found to investigate potential variables related to the quality of the attachment relationship.

Indiscriminate friendliness was firstly studied with children adopted from Romanian institutions (Chisholm, 1998; Chisholm et al., 1995) and has been mentioned within IA children in later studies (e.g., Bruce, Tarullo, & Gunnar, 2009). Only one study by van den Dries and colleagues (2012) was found investigating indiscriminate friendly behaviors with Chinese adoptees. Van den Dries et al. (2012) investigated the behaviors in Chinese adoptees and found that children adopted from both institutions and foster care presented with more indiscriminate friendliness than non-adopted children at similar developmental stage. The study also revealed

that adoptees provided with better maternal care showed less indiscriminate friendliness than those who did not gain reasonable maternal care. Indiscriminate friendliness in adopted children was examined along with attachment in several other studies (e.g., Chisholm, 1998; Zeanah et al., 2002), as both constructs fall into the behavioral system and deal with relationships between children and others.

International adoption process enables professional counselors and other mental health professionals to work with IA children and families, however, professional counseling journals and books offer little help in addressing the development of the children, things related to the process, and needs of the population. Journals in psychology, social work, children and youth services, adoption, and sociology (e.g., Bruder, Dunst, Mogro-Wilson, & Tan, 2010; Cohen & Farnia, 2010 & 2011; Lee, Grotevant, Hellerstedt, Gunnar, M. R., & The Minnesota International Adoption Project Team, 2006; Mohanty & Newhill, 2005; Pugliese et al., 2010) provide more information around post-adoption adjustment and development issues. Important variables were generated based on findings from these related disciplines. Results yielded from this study can fill in the literature gap in counseling and relevant realms and provide professional counselors, mental health professionals, and families with important information to support Chinese adoptees and families and transfer results to broader IA population.

Purpose of the Study

The purpose of this study is to add content to current knowledge base and to investigate variables that appear to have particular significance in explaining the variance in attachment security in Chinese adoptees. This study will also examine the relationship between each of the variables and indiscriminate friendliness as well as the relationship between attachment security and indiscriminately friendly behaviors. The attachment theory (Bowlby, 1951, 1953, 1969, 1973)

with integration of parenting models (Baumrind, 1978) will be used as the conceptual framework to guide this study. The study aims at examining the role of key variables in explaining difference in attachment security and how these variables may be related to indiscriminate friendliness in adoptees. The role of age when adopted, pre-adoption institutionalization experiences, time spent with adoptive families, and parenting styles is examined and discussed based on current literature and the conceptual framework. It provides important cues for challenges in developing secure child-parent attachment, as well as future needs for children adopted from China and their U.S. adoptive families. The research questions of this study are:

1) Are age when adopted, institutionalization experience, time spent with adoptive families, and parenting styles significantly associated with attachment security in Chinese adoptees?

2) Are age when adopted, institutionalization experience, time spent with adoptive families, and parenting styles significantly associated with the indiscriminately friendly behavior presented by Chinese adoptees?

3) Are attachment security and the level of indiscriminate friendliness correlated in the sample of Chinese adoptees in this study?

Based on the three questions, hypotheses for the study are:

1) Chinese adoptees adopted at an early age, with more positive institutionalization experience prior to adoption, more time spent with adoptive families, and have receive more authoritative parenting present with more secure attachment.

2) Chinese adoptees adopted at an early age, with more positive institutionalization experience, more time spent with adoptive families, and have received more authoritative parenting present with less indiscriminate friendliness.

3) Attachment security is negatively associated with the level of indiscriminate friendliness showed in children in this study (i.e., children present with more secure attachment would show less indiscriminate friendliness).

Screening criteria for the study include: (a) the children involved in the study were adopted under 24 months at the time of arrival, (b) children are currently under six years old (72 months old), and (c) families involved are U.S. white families with heterosexual couples.

Significance of the Study

The study examines the significance of key variables and their relationships with attachment security and indiscriminately friendly behaviors presented by Chinese adoptees. Findings from this study may become a stepping-stone for further evidence-based studies. This study provides both IA families with Chinese children and mental health professionals with better understanding of what may be associated with attachment, whether or not they relate to the level of indiscriminate friendliness in the target population, and correlation between attachment and the indiscriminately friendly behaviors in children. It also helps examine whether or not the variables affecting attachment and indiscriminate friendliness in IA families would apply to Chinese adoptees. The study is expected to be useful in developing psychoeducation protocols and/or counseling interventions with children adopted from China and their U.S. adoptive families. Parents and professional counselors can gain an understanding of relationships between important variables and child-parent attachment and indiscriminate friendliness, as well as relationships among those variables.

Definition of Key Terms

Key terms included in the study are defined as below:

Attachment. Attachment is defined as "an affective tie between infant and caregiver and to a behavioral system, flexibly operating in terms of set goals, mediated by feeling, and in

interaction with other behavioral systems." (Sroufe & Waters, 1977, p.3) It is influenced by specific context versus stays static. Attachment involves a child using the caregiver as secure base, simultaneously, exploring unknown surroundings (Ainsworth, 1979; Sroufe & Waters, 1977). It differs from child-parent bonding which in most cases refers to skin-to-skin contact between an infant and a caregiver. Attachment in this study goes beyond child-mother relationship and indicates the relationship between a child and his/her primary caregiver.

Indiscriminate friendliness. Indiscriminate friendliness is defined as children's behaviors of expressing indiscriminate affection toward any adults including strangers without appropriate caution or fear which is expected to possess by children at the developmental stage (Tizard, 1977).

International adoption. International adoption refers to the process of transferring children from a country of origin to another host country, where parents and adopted children usually meet across lines of physical, environmental, socio-economic, and cultural differences (Bartholet, 2005).

Age when adopted. Age when adopted refers to children's age when they arrived in the U.S. It is also called age at arrival in the host country (Tan et al., 2012).

Institutionalization experience. Institutionalization experience means adoptees' experience in institutions in their birth countries prior to adoption, such as orphanages, hospitals, and baby homes (Gunnar et al., 2007). All children involved in this study were adopted from Chinese orphanages. Institutionalization experience includes two main aspects in this study: 1) The length of time that a child had been institutionalized; and 2) The quality of care that the child had received in the institution that s/he was adopted from.

Time with adoptive parents. Time with adoptive parents refers to the length of time that an adoptee has spent with his/her adoptive families. It was calculated as the child's current age deducting age when adopted (i.e., age when the child arrived in the U.S.). Length of time children spent with adoptive parents is measured by months in this study.

Parenting styles. Parenting styles were proposed by Baumrind (1978) as three typologies including authoritative, authoritarian, and permissive parenting. According to Baumrind (1978), authoritative parenting refers to parent(s) showing warmness, affection, responsiveness, and support to children's interests while setting up reasonably high expectations for their children. Authoritarian parenting involves expressing high demandingness to children without showing sufficient warmness, support, and responsiveness. Permissive parenting, in the mid-place between authoritative and authoritarian parenting approaches, reflects parents' moderate warmness, support, and responsiveness to children's needs but failing to establish reasonable expectations. Maccoby and Martin (1983) added a fourth dimension to the primary typologies named indulgent parenting, indicating parents' showing low demandingness and even lower level of responsiveness to children. This study only focused on the three primary parenting styles based on Baumrind's (1978) work.

Maternal responsiveness. Karl (1995) defined maternal responsiveness as the primary caregiver's ability to sense various cues that an infant showed and to respond to these cues on an immediate and consistent manner. As it specifies the primary caregiver in the definition, it can be referred to either mother of father's responsiveness to the infant. Maternal sensitivity in the literature refers generally to parents' responsiveness to infants, but the concept of parenting styles takes on greater significance when it concerns young children (Liu & Hazler, 2015).

CHAPTER 2

REVIEW OF LITERATURE

Many efforts have been made to study children adopted from of Romanian fostering institutions versus children from Asian countries (Van den Dries et al., 2010). Studies (Cohen & Farnia, 2010 & 2011; Pugliese et al., 2010) were conducted to investigate attachment issues with Chinese adoptees in Canada. To provide a thorough review on potential variables associated with attachment security and indiscriminate friendliness in Chinese adoptees with U.S. parents, this section includes a review of literature on areas including specific situation of adoption from China, IA children's pre and post adoption conditions, and variables related to post-adoption adjustment of IA children and Chinese adoptees. The literature review also includes an introduction to the attachment theory and parenting models as the theoretical framework of this study. Indiscriminate friendliness investigated in IA literature is also discussed.

Children adopted from China by the U.S. families faced transition to a different physical as well as cultural environment. As children (especially children at the pre-school age) are resilient about environmental changes, most Chinese adoptees successfully developed the resiliency and adapted to the new environment. This was supported by longitudinal and meta-analysis studies (e.g., Cohen & Farnia, 2010; Roberson, 2006; van den Dries et al., 2010) with evidences that Chinese adoptees embraced the changes brought by the transition and adjusted well in their host environment. Child-parent attachment in IA families has aroused some attention in adoption literature, studies (Cohen & Farnia, 2011; Dunkelberg, 2008; O'Connor, Marvin, Rutter, Olrick, Britner, & the English and Romanian Adoptees Study Team, 2003) examined attachment development and behaviors of children following the adoption process.

Attachment behaviors that children presented shortly after the adoption were also examined (e.g., Houlihan, 2010; van den Dries et al., 2009).

Adopted children from China are likely to present with insecure attachment, particularly in the beginning stage of the transition, like children adopted from other countries (Cohen & Farnia, 2010). However, there may be different attachment patterns for children adopted from China compared with other internationally adopted children due to a combination of reasons (van den Dries et al., 2009; Tan et al., 2012). The meta-analysis study of van den Dries et al. (2009) revealed that factors which can affect adoptees' post-adoption adjustment include improved pre-adoption care provided by orphanages with the increasing funding generated from international adoption, characteristics of the adoptees, and post-adoption care provided by U.S. adoptive families.

Adoptees with indiscriminate friendliness react intimately to strangers, lacking reasonable fear and reticence (Chisholm, 1998). Aligning with Chisholm's findings, van den Dries et al. (2012) found that Chinese adoptees presented with an increased level of indiscriminate friendliness. The behavior was asserted to be related to the lack of attention given to adoptees in institutions where the children were adopted from (Chisholm, 1998). The indiscriminately friendly behavior was identified in a number of institutionalized adoptees 11 and 39 months following adoption (Chisholm, 1998), it was also recognized in children adopted from Romanian institutions to the United Kingdom who were evaluated at the age of four to six years old (O'Connor et al., 1999). Indiscriminate friendliness was classified as one of the most persistent socially abnormal behaviors in institutionalized children (APA, 1994; Zeanah et al., 2002).

This section focuses on child-parent attachment and related developmental themes between adopted children from China and their U.S. adoptive parents under the conceptual framework of attachment theory and parenting styles. The foci of this literature review will include: the history of adoption from China to the U.S. and relevant social/cultural background, an overview of conceptual framework including attachment theory and parenting models, brief review on indiscriminate friendliness in IA children, and key variables derived from current studies which may be related to attachment and post-adoption adjustment with IA children. It highlights studies particularly addressing the attachment between children adopted from China and their adoptive parents.

History of Adoption From China to the U.S.

Adoption from China to the U.S. started in 1992 (Ponte, Wang, & Fan, 2010). More than 70,000 Chinese children were adopted by U.S. parents from 1992 to 2008. Between October 1999 and September 2013, around 72,000 Chinese children were adopted to the U.S., which enabled it to be the largest sending country since 2009 (The U.S. Department of State, 2014). Approximately one-third of children among all IA children were adopted from China since 2000 (U.S. Department of State, 2011), and the year 2005 was the peak of U.S. adoption from China (U.S. Department of State, 2005). Roughly 90% of Chinese adoptees are female infants.

China opened its door for international adoption and implemented the specifically IA law in 1999 due to the increasing ratio of infant abandonment (Hoshmand et al., 2006). China's IA law intends to preferably consider parent(s) older than 35 years old from foreign countries with reliable family income. In 2008, China implemented its new international adoption regulations which eliminated single-parent and same-sex-parent adoption. It was predicted that the number of adoptions from China to U.S. would gradually decrease because of the flexibilities added to

the one child policy and the improved concepts the culture holds for women (Dowling & Brown, 2009; Hoshmand et al., 2006). The history and status of Chinese adoption inspired a closer look at China's special political, social, and cultural situations along with adoptees' pre-adoption conditions.

Adoption from China has been affected greatly by China's political and cultural characteristics, specifically by China's one-child policy first implemented in 1979 and its cultural emphasis on male versus female infants. The one-child policy was designed to control population growth by requiring that a couple can only have a single child. The one-child policy along with China's rooted cultural emphasis on sons over daughters continues to cause the abandonment of many infant girls (Johnson, 2004). This way parents can have a second child, but still be only a one-child family. Most of the abandonments happen in rural areas of China where households without a son were mostly likely to be discriminated against by people for potentially losing their family name in following generations (Chen & Li, 2009). Family name has great cultural importance throughout China, but rural populations are the most concerned about these issues.

The one-child policy impacts more than numbers of adoptees. It is speculated to be an indirect variable in Chinese adoptees' better physical and experiential conditions when adopted (Kreider & Cohen, 2009; Miller & Hendrie, 2000). Child abandonment in this case differs from many other countries from which abandoned children are adopted. The one-child policy along with cultural preference of male infants means that the majority of Chinese children put up for adoption were abandoned for poverty, politic, and cultural reasons and not for health or disability reasons as is often the case in other countries. These circumstances create a situation where potential adoptees come from healthy parents in relatively pregnancy friendly environments.

Many adoptees coming from countries other than China have had to survive pregnancy and post-pregnancy conditions that were less than friendly to the fetus and child development. Adoptees from Eastern Europe and Russia for example, consistently experience pre-adoption adversities such as poverty and birth mothers' alcohol and substance use during pregnancy (Kreider & Cohen, 2009; Welsh &Viana, 2012). The physical and emotional pre-adoption environment for these children logically makes a significant difference in their potential to successfully develop as they meet the multiple demands of the adoption process. One example of the results of this situation is that the disability rate for Chinese adoptees is much lower than other internationally adopted children (Kreider & Cohen, 2009).

Adoption from China to the U.S. brought in changes of overall environment and primary caregivers with adoptees. According to Bowlby (1973), the experiences of loss and separation may affect children's attachment development. A majority of Chinese children were adopted to the U.S. were under two years old which is the most critical period to develop secure attachment with parents (Bretherton, 1992). Attachment theory (Bowlby, 1951, 1953, 1969, 1973) will be used as the main framework for this study with integration of parenting styles.

Conceptual Framework

Attachment theory serves as the main theoretical framework for this study, because it provides explanations for the impacts of separation, losses, and changes of environment on development of children's attachment relationship. Some researchers (e.g., Dunkelberg, 2008; Hill, Lambert, Triseliotis, and Buist, 1992; Houlihan, 2010) have successfully used attachment theory as the conceptual framework in their works. For example, Hill et al. (1992) studied the attachment between adoptive parent(s) and their adopted children in 100 Scottish adoption cases and found challenges involved in developing secure child-parent attachment between the

children and parents. Parenting styles (Baumrind, 1978) are incorporated into the theoretical framework, as attachment and parenting are described as two parallel behavioral systems (Roberson, 2006). The two systems together facilitate attachment relationship in adopted children and effective caregiving by adoptive parent(s).

      Attachment theory. The origin of attachment theory is traced back to the collaboration of John Bowlby (1907-1991) and Mary Ainsworth (1913-1999) (Bretherton, 1992). Bowlby accomplished the blueprint of the theory around 1950, and Ainsworth conducted empirical studies about the theory afterwards. Bowlby (1951 & 1953) studied the impact of children's separation from their mothers on children's later development, where distress was found in these children due to the lack of maternal care, thus proposed that a steady and continuous mother/caregiver-child relationship is of great importance for a child's development and social adjustment. Bretherton (1992) summarized the three volumes of attachment trilogy including attachment and ethology, separation, and loss. Children's attachment behaviors to caregivers, as analogized as a couple, always depend on the interactions between the two parties (Bretherton, 1992), and both gain pleasure and satisfaction if understanding each other's motives as goal-corrected partnership (Bowlby, 1969). The goal-correction concept indicates that children would automatically activate proximity provoking behaviors (e.g., crying, locomotion) if encounter external stimuli (e.g., absence of primary caregiver). As concluded in the separation volume, supportive and encouraging parenting would more likely facilitate children to grow up in a stable way and became self-reliant (Bowlby, 1973).

      As noted by Benoit (2004), attachment was mistakenly treated as "bonding" by many professionals and non-professionals in medical and mental health fields. Attachment involves children using the caregiver as a secure base, seeking proximity, and exploring the unknown at

the same time (Ainsworth, 1979; Bowlby, 1969; Sroufe & Waters, 1977), while child-parent

bonding implies mostly skin-to-skin contact between an infant and a caregiver in an early period

of development. The core component of the attachment behavioral system is a sense of security

(Sroufe & Waters, 1977), and proximity seeking is the behavioral demonstration of the child's

subjective experience of security or insecurity (Bowlby, 1969; Sroufe & Waters, 1977).

One assumption made by Sroufe and Waters (1977) is that children gain attachment

security through frequent interactions, continuous exposure, and reciprocal behavioral exchanges,

and thus are able to discriminate attachment figures from less familiar or unknown persons, and

to anticipate the goals and behaviors of the primary attachment figure. The ability to identify,

discriminate, and anticipate forms children's internal working models, another key component of

attachment (Bowlby, 1969). From the organizational perspective of attachment (Sroufe & Waters,

1977) which aligns with the work of Bowlby and Ainsworth, a child gains a sense of protection

and space to explore the unknown from the attachment relationship with the caregiver. Secure

attachment to the caregiver indicates a child's strong internal working models, and such security

can be generated from using the caregiver as a secure base to explore the novel surroundings

(Ainsworth, 1979; Sroufe & Waters, 1977).

Children's internal working models. The internal working model is a key element in

attachment relationship between children and parent(s) according to attachment theory.

Bretherton (1996) conceptualized internal working models to be children's capability to learn

from previous attachment relationships and to formulate reasonable expectations for future

relationships with caregivers. Children with attachment security are more likely to develop

strong internal working models with salient self-efficacy, which enable them to be empathetic

and be more capable of maintaining relationships (Ainsworth, 1979; Sroufe, Carlson, & Shulman,

1993). Children with insecure attachment, on the other hand, are more likely to develop weak internal working models lacking of self-efficacy and view others as unresponsive. Bretherton (1996) emphasized the role of favorable child-parent relationships in facilitating a child's internal working model of self. A child is thus more likely to develop a strong internal working model of a valued and reliant self if the caregiver consistently acknowledges the child's needs, but may more likely to form an internal model of an unworthy and incompetent self if s/he has experienced frequent rejections from parents. Children's expectations of caregivers' responsiveness develop in the first few years and remain relatively stable throughout the rest of their life (Bowlby, 1973). Children's attachment behaviors may change with the increasing maturity (Cassidy, 1999).

Attachment styles. Classification of attachment styles was mainly based on the work of Ainsworth, Blehar, Waters, and Wall (1978) who developed the *Strange Situations* to measure infant-mother attachment behaviors. Ainsworth studied infants' reactions to separation and reunion episodes of mothers in a laboratory setting. According to infants' behaviors elicited by the episodes, Ainsworth et al. (1978) classified infants into three groups: Group A (avoidant), Group B (secure), and Group C (anxious-ambivalent). Main findings by Ainsworth (1979b) regarding the three groups include: Group B infants showed secure child-parent attachment, using mothers as secure base to explore the environment though attachment behaviors was intensified and exploration diminished in separation episodes; Group C infants presented with a higher level of anxiety and distress even in pre-separation episodes, consistently seeking proximity with mothers; and Group A infants rarely cried in separation and reunion episodes, instead, presented with avoidant behaviors toward mothers. Although mothers are the attachment figures in Ainsworth's studies (1979a & 1979b), the term "mother" denotes the primary

caregiver of a child. Fathers (or caregivers in institutions) may play the "mother" role in an attachment relationship, thus can be potential attachment figures of children.

Ainsworth's studies have laid a well-acknowledged foundation for later studies on attachment styles. The three attachment styles (secure, anxious-ambivalent, and avoidant) generated by Ainsworth et al. (1978) are viewed as organized attachment styles considered as adaptive to infants' environments. Shaver, Collins, and Clark (1996) added a fourth attachment style based the work of Main and Cassidy (1985) and Main and Solomon (1986) named disorganized attachment. Disorganized children, characterized by low self-confidence and low self-worth (Cassidy, 1988) suffer for being restless and losing focus. Main and Solomon (1986) found it difficult to place a number of children in any one of the three organized attachment styles. These children showed an absence of an organized way to deal with stress, thus were named as disorganized-attached children. Disorganized attachment was then defined as the failure of demonstrating consistent and organized approaches to regulate emotions in stressful situations (Main & Hesse, 1990). Main and Solomon (1990) provided several concrete examples of disorganized attachment behaviors such as stilling and freezing for unreasonable amount of time, apprehension/fear of the parent, and contradictory behaviors. Disorganized attachment behaviors may be associated with parental abuse and neglect (Egeland & Sroufe, 1981), and are mostly found in children with maltreated history (Chisholm, 1998).

Chinese adoptees' post-adoption attachment under attachment theory. Children adopted from China experienced a variety of transitions in areas of culture, language, as well as social environment. They experienced both separation and loss, and face a critical stage to develop attachment with new parents. Children's first few years, according to Bretherton (1992), fall into the category of Bowlby's goal-corrected partnership stage when children are most

sensitive to the interaction patterns with caregivers, and the most attached to their attachment figures. As emphasized by Sroufe (1979), at the transition point, it is critical for caregivers to help children deal with difficult situations, discomforts, and changes of environment to help children maintain organized behaviors. Sroufe also stressed that with transition from previous institutions, orphanages, or birth families, to adoptive families, children's attachment to caregivers changed at different levels and the emphasis would be put on the attachment behaviors of the children to parent(s) and how parents' responsiveness counter previous separations and losses of the children brought by the adoption process.

Parenting Styles. Baumrind (1978) categorized three primary parental typologies (see Spera, 2005) including authoritative, authoritarian, and permissive based on her previous work. Baumrind summarized that authoritative parents show warmness, affection, and responsiveness, and provide support to children's interests. Meanwhile, they set up reasonably high demands and expectations for their children. Authoritarian parents express high expectations and demands to their children without demonstrating sufficient warmness, support, and responsiveness. They are critical about children's achievements, neglecting children's emotional status. Permissive parents, in the mid-range of the spectrum, demonstrate moderate warmness and responsiveness to children's needs, but fail to establish expectations and reasonable demands for their children. Maccoby and Martin (1983) studied and compared the effectiveness of the three parenting styles, thus included a fourth element, indulgent parenting, to the primary three parenting styles called indulgent. Maccoby and Martin claimed that indulgent parents provide low demands to their children and even lower level of responsiveness than permissive parents.

Interplay of attachment with parents' responsiveness. Responsiveness is one of the two criteria in evaluating parenting approaches. High level of parental responsiveness is an

important characteristic of authoritative parenting. Maternal responsiveness or sensitivity was more frequently used in infant-parent relationships, whereas parenting styles/approaches appear more often in studying preschool children or adolescents (Liu & Hazler, 2015). Relationship between attachment behaviors and maternal responsiveness was studied in Ainsworth (1979a), which showed that mothers' consistently sensitive responsiveness was associated with Group B infants. Ainsworth also found a connection between mothers' inconsistent responsiveness and Group C infants, along with a positive relationship between mothers' rejection behaviors and Group A infants.

Studies (Berlin, Cassidy, & Belsky, 1995; Stams et al., 2002) on adopted infants/toddlers' attachment with their adoptive parent(s) showed that not only biological (e.g., gender) and inherited (e.g., temperament) variables, but also maternal responsiveness and sensitivity, affect child-parent attachment security. With the transition to a new environment along with the separations and losses, risks would be accumulated in adopted children and may harm children's development, but protective factors cultivated by adoptive parents may buffer the negative results, thus increase resilience in the children (Werner, 2000). Stams et al. (2002) investigated the interactions between adopted children and their biologically irrelevant adoptive parents, and found that parent(s)' sensitive responsiveness contributed substantially to children's post-adoption adjustment. Baumrind's (1966) analysis on the authoritative parenting approach provides further information on the relationship between the attachment behavior systems and parents' responsiveness.

Studies on Child-parent Attachment

Studies on IA children's attachment. Frustrating attachment experiences were reported in IA children by their adoptive parents (Brodzinsky, Schecter, & Henig, 1993; Verrier, 2000).

Despite the unsatisfied attachment facts, the majority of adopted children adjusted well, and in the cases that they experienced attachment and/or adjustment difficulties, usually something special was involved (e.g., pre-adoption trauma experience) which prohibited children's adaptability to a new environment and to attach to their adoptive families (Roberson, 2006). Studies (e.g., Friedlander, 1999; Mohanty & Newhill, 2005; van den Dries et al., 2009; van IJzendoorn & Juffer, 2006) were conducted on IA children' overall adjustment and cultural adaption to the new environment. Few qualitative research studies (e.g., Ballard & Ballard, 2011; Harrigan, 2010) addressed the role of story-telling by parent(s) and its importance of helping adopted children form cultural identities.

Children's post-adoption adjustment outcomes were found to be related to their age at the time of adoption (van den Dries et al., 2009; Vorria et al., 2006), and children who were under 12 months when adopted exhibited less adjustment problems and atypical attachment disorders than children adopted at an elder age. Adoptees institutionalization experience (the length of time that children were institutionalized in their countries of origin and the quality of care they have received) also plays a significant role in affecting both adoptees' brain growth and their post-adoption behaviors (Rutter et al., 2004; van den Dries et al., 2009). Institutionalized adoptees were found to present with more insecure attachment behaviors and disorganized attachment disorders compared with children who were adopted directly from foster families (Vorria et al., 2003), and Asian adoptees seemed to exhibit better attachment patterns compared with children adopted from Eastern Europe who were speculated to be influenced by poor caregiving quality and possibly birth mothers' alcohol and drug history during pregnancy (van den Dries et al., 2009). Gender difference was also found in terms of adoptees' post adoption adjustment, as adopted females were found to show better adjustment than male adoptees (Stams et al., 2002).

Studies on Chinese adoptees. With the increasing population of children adopted from China by U.S. families, more articles (Bruder et al., 2010; Ponte, Wang, & Fan, 2010; Pugliese et al., 2010; Tan & Marfo, 2006; Tan, Marfo, & Dedrick, 2010) were published on post-adoption adjustment of Chinese adoptees since 2000. These studies focused on Chinese adoptee's overall adjustment since adoption mostly through longitudinal studies, or on the differences in adjustment outcome between Chinese and other IA children. Studies (e.g., Cohen & Farnia, 2010; van den Dries et al., 2010; Tan, 2011) showed that most children adopted from China caught up with their non-adopted peers in terms of overall development and presented with optimal adjustment and secure attachment one or two years since adoption. Chinese adoptees for all age groups showed no more behavioral problems than their non-adopted peers, and Chinese adoptees at pre-school age particularly showed less behavioral problems than their non-adopted Canadian peers (Cohen & Farnia, 2010).

Two empirical studies (Tan & Marfo, 2006; Tan, 2011) yielded new findings that the optimal adjustment results were more related to children's behaviors presented at the time of adoption along with pre-adoption conditions that the children experienced. Age at the time of adoption was found to be nonsignificant in both studies. Tan et al. (2012) also examined relationships among parents' stresses (measured by Social Problem Questionnaire, SPQ), parenting styles (measured by Parenting Styles and Dimension Questionnaire, PSDQ), and children's behavioral problems (assessed by Child Behavior Checklist, CBCL), and found that that parents' stress was positively correlated with children's behavior problems, whereas authoritative parenting was associated with less behavioral problems.

Behaviors at time of adoption refer to specific behaviors that adoptees presented at the initial stage of adjustment (Tan & Marfo, 2006). The behaviors may reflect the attachment

security in children in relationship with adoptive parents. Behaviors identified by Tan and Marfo (2006) are crying, clinging, avoidant, and resistant behaviors. Little information was found regarding the relationship between adoptees' behaviors inhibited from pre-adoption environment and their adjustment after adoption. O'Connor et al. (1999) first connected initial behaviors at the time of adoption with IA children's later attachment outcomes. Relationship between behavioral adjustment and rejection behaviors was studied with pre-school and school age Chinese adoptees respectively (Tan & Marfo, 2006). Tan and Marfo (2006) found that with pre-school age adoptees, a positive relationship exists between children's rejection behaviors at the time of adoption and both internalizing and externalizing behavioral problems. With school age children, positive relationship was found only between the initial rejection behavior and externalizing behavioral patterns. A following study by Tan, Marfo, and Derick (2010) on early post-adoption adjustment predictors with 452 pre-school age Chinese adoptees measured adoptees' behavioral adjustment at two times (Mean age = 2.7 years at Time 1 and 4.8 years at Time 2). The study revealed that the exhibited behaviors at the time of adoption predicted adjustment outcomes better than age, thus children's behaviors originating from their Chinese environmental experiences appear to be more influential adoption outcomes than the maturity that comes with age.

Parenting stress refers to negative reactions to the demands of being a parent and is linked with tasks of parenting, parents' psychological and behavioral well-being, child-parent relationship, as well as the child's psychosocial development (Deater-Deckard, 1998; Nagnon-Oosterwall, Cossette, Smolla, Pomerleau, Malcuit, Chicoine…, & Séguin, 2012). Sources of parental stresses may be marital dissatisfaction, home chaos, parents' depressive conditions, and/or job related pressure (Nelson, O'Brien Blankson, Calkins, & Keane, 2009). There is a lack

of literature examining the relationship between parenting stress and the child-parent attachment outcomes in adoptive families. Only a few studies were found that addressed the relationship between parenting stress and IA adoptees' post-adoption behavioral adjustment.

According to Deater-Deckard (1998), parenting stress has become a significant variable of dysfunctions in child-parent relationships and a risk factor for child psychopathology. Two studies (Grant, Compas, Thurm, McMahon, & Gipson, 2004; Tan et al., 2012; van den Dries et al., 2009) supported that the level of parenting stress and the child's presenting behavioral problems were positively correlated. Maternal depression prior to adoption as well as high parental expectations of problems (i.e., expecting a high rate of occurrence of child's behavioral problems) were significant predictors for post-adoption parenting stress according to the longitudinal study of Viana and Welsh (2010).

Indiscriminate Friendliness

Indiscriminate friendliness stands out as another salient issue in adopted children. It is often viewed as a unique issue different from attachment (Bruce, Tarullo, & Gunnar, 2009; Chisholm et al., 1995; Chisholm, 1998; van den Dries et al., 2012; Zeanah et al., 2002), but has been examined along with attachment security, issues, and behaviors in these studies. Tizard (1977) defined indiscriminate friendliness as children's indiscriminately friendly behavior toward all adults including unknown ones without appropriate caution or fear expected to be possessed by children at the same developmental stage. Children showing indiscriminate friendliness lack social boundaries when interact with strangers.

Along with the indiscriminate friendliness variable, Chisholm (1998) offered detailed discussion on Romanian adoptees' attachment patterns, noting that securely attached children also presented with indiscriminately friendly behaviors, though insecurely attached children

demonstrated more indiscriminate friendliness than securely attached children in the study. Indiscriminate friendliness has been identified as a prevalent issue in institutionalized children. More than 60% of Romanian adoptees who had spent more than eight months in institutions presented high level of indiscriminate friendliness as reported by their adoptive parents (Chisholm et al., 1995). Institutionalized IA children showed more indiscriminately friendly behaviors than domestically adopted children (O'Connor et al., 1999). Children adopted from high-quality institutions exhibited more secure attachment, but still showed indiscriminate affection to unfamiliar adults (Chisholm, 1998; van den Dries et al., 2012). Adoptees' indiscriminately friendly behaviors did not decrease despite an increase of attachment security two years since adoption (Chisholm et al., 1995), which was speculated to be associated with lack of consistency in care providing and responsiveness from caregivers (Chisholm et al., 1995; Smyke et al., 2002).

Bruce, Tarullo, and Gunnar (2009) examined the relationship between indiscriminate friendliness and several potential correlates. The authors examined the association between indiscriminate friendliness and possible etiological factors, and between indiscriminate friendliness and several behavioral correlates in 120 six to seven-year old children equally distributed across three groups: institutional care, non-adopted, and foster care. One-way ANOVA analysis indicated that children from the institutional care and foster care groups scored significantly higher in the indiscriminate friendliness measure than those from non-adopted group. The length of institutionalization was found to be a significant variable associated with the level of indiscriminate friendliness rather the degree of general deprivation. Among the behavioral correlates, the level of indiscriminate friendliness was not related to children's

cognitive ability, attachment behaviors, or emotion abilities, however, was negatively related to children's inhibitory control.

Important Variables

Overall adjustment outcomes of children adopted from China were studied with the increase of Chinese adoptions in recent two decades (Bruder et al., 2010; Ponte, Wang, & Fan, 2010; Pugliese et al., 2010; Tan, 2011; Tan et al., 2012; Tan & Marfo, 2006; Tan, Marfo, & Dedrick, 2010). There is a paucity of information specifically focusing on attachment issues. Three studies (Cohen & Farnia, 2010 & 2011; Pugliese et al., 2010) revealed patterns about attachment issues with Chinese adoptees in Canada. One study was found examining the attachment security and indiscriminate friendliness in Chinese adoptees in Netherland (van den Dries et al., 2012). No research was found focusing on attachment relationship between Chinese adoptees and their adoptive families in U.S. Little was known about if the variables influencing IA children' post-adoption attachment may or may not apply to Chinese's adoptees, so was about the interactions among these variables when applied to families with Chinese children. A further review of literature is conducted on specific variables that appear to be important to children's adjustment from the conceptual framework and current literature.

Age when adopted. Evidences can be found on age as a predictor of IA children's post-adoption adjustment outcome. It was indicated that age was significantly related to IA children's overall adjustment since adoption (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2005; Smyke, Zeanah, Fox, Nelson, & Guthrie, 2010; Stams et al., 2002; van Londen, et al., 2007). The relationship between age and attachment outcomes has been particularly examined by studies with IA children (van den Dries et al., 2008; Vorria et al., 2006). IA children adopted at a younger age were found to be better attached to their adoptive parents and show more secure

attachment behaviors (Juffer et al., 2008; van den Dries et al., 2009;), whereas those who were adopted at an older age were reported to be more likely to develop insecure attachment (Marcovitch, Goldbery, Gold, Washington, Wasson, Krekewich, & Handley-Derry, 1997; O'Connor, Marvin, Rutter, Olrick, & Britner, 2003; Pugliese et al., 2010; Rutter et al., 2007; van Londen et al., 2007; Vorria et al., 2006). Proponents of the findings use age at adoption as a proxy for length of time that IA children had been institutionalized in their countries of origin, which indirectly reflect the amount of time that IA children experienced adversity prior to adoption (Marcovitch et al., 1997; Tan et al. 2010; Weitzman & Avni-Singer, 2005).

Little information was gained about the relationship of age at adoption to children's post-adoption development in Chinese children. Studies (Cohen & Farnia, 2011; Tan, Marfo, & Dedrick, 2010) focusing on Chinese adoptees' post-adoption adjustment outcomes indicated a discrepancy regarding significance of age as a predictor of post-adoption adjustment between Chinese and other IA children. Age when adopted was found to be a nonsignificant variable to predict Chinese adoptees' externalizing and internalizing behavioral problems (Tan et al., 2010), nor it predicts social-emotional development (Cohen & Farnia, 2011) in Chinese adoptees. Behaviors exhibited at the time of adoption instead were found to be a better predictor and was positively correlated with behavioral outcomes of these children (Tan et al., 2010).

Pre-adoption institutionalization experiences. Institutionalization for abandoned children has been a worldwide phenomenon without exception for China. About 85% of international adoptees had different levels of institutional experience in their birth countries, specifically in places like orphanages, hospitals, and baby homes (Gunnar, Van Dulmen, & the International Adoption Project Team 2007). An important component of international adoptees' institutional experience is the care that they received in the institutions which varies from

country to country and even within a country. Along with pre-adoption parental quality and biological variables related to birth mothers' pregnancy conditions, international adoptees' pre-adoption institutional experience was found to be a significant predictor of their post-adoption behavioral problems (Hawk & McCall, 2010; Merz & McCall, 2012; van den Dries et al., 2009). Welsh and Viana (2012) maintained that rearing in orphanages or other institutional units prior to adoption increased the likelihood of developmental, behavioral, and medical risks in IA children. The lack of labor and resources and absence of stable care providers in orphanage or other institutions also placed IA children in a disadvantaged status in developing secure attachment (Gunnar, Bruce, & Grotevant, 2000).

High rates of disorganized and insecure attachment were reported in institutionalized adoptees (van den Dries, et al., 2008; Zeanah, Smyke, Koga, Carlson, & the BEIP Core Group, 2005). As quality and type of institutional care differ significantly among countries of origin and from institution to institution, children experiencing poor institutional care prior to adoption exhibited more severe developmental problems than those reared in foster or other home-care environment (Welsh & Viana, 2012). Children adopted from Romania in 1990's were found to show many developmental deficits by the time they arrive at adoptive homes, whereas Chinese and Russian adoptees exhibited less deficits and gained faster overall development (Albers, Johnson, Hostetter, Iverson, & Miller, 1997; O'Connor & Rutter, 2000; Rutter et al., 2009; Welsh & Viana, 2012).

China has one of the largest orphanage scales accommodating an estimation of over one million children age between 0 to 17 years (UNICEF, 2009). Characteristics of Chinese institutions and how they may be related to adoptees' post-adoption adjustment were investigated (e.g., Neimetz, 2011; Ponte et al., 2010), and differences existed within Chinese adoptees as a

group. Former institutionalized children showed less secure attachment compared with pre-adoptive foster children (van den Dries, Juffer, van IJzendoorn, Bakermans-Kranenburg, & Alink, 2012). Interviews with Chinese adoptees conducted by Ponte et al. (2010) showed improvements in overall conditions of Chinese orphanages according to adoptees' self-report based on their returning trips to China. These physical improvements of the orphanages may be partially contributed by adoptive families' financial help. Attention has also been directed to the psychological aspect of institutional care in China through recognizing the benefits of embracing family-like atmosphere (Neimetz, 2011; Shang, 2002). Neimetz (2011) investigated a private Chinese orphanage infusing a family-like model into institutional care providing. Family-like atmosphere in the study was demonstrated by staff's identification with family roles versus professional titles in the setting besides the physical appearance of home circumstances. For example, the director, co-director, and other caregivers were identified as father, mother, and siblings respectively. No evidence was found to support the family-like structure of Chinese orphanage, but the psychological emphasis tells uniqueness of this type of private institutional care and provides quasi-family environment, aims at counterbalancing effects of the large quantity of children hosted in the institution (Neimetz, 2011).

Time spent with adoptive family. Time that children live with adoptive parents allow them to recover from prior adverse experiences (van den Dries et al., 2008), which is supported by the meta-analysis of Juffer and Van IJzendoorn (2005) with findings that children who spent above 12 years in adoptive families showed better catch-up in behavioral performance. A handful of longitudinal studies examined IA children's recovery after early adversities and growths in areas as externalizing and internalizing behaviors, child-parent attachment, and social-emotional adjustment since adoption (Hawk & McCall, 2010; Niemann & Weiss, 2011;

Palacios, Roman, & Camacho, 2010; van den Dries et al., 2012; van Londen et al., 2007). Van

Londen et al (2007) compared the attachment outcomes and mental and psychomotor

development of 70 IA children in Dutch at 14-month old who were adopted before 12 months

old with normative level of children at the same age. Their mental and psychomotor scores fell

into the normative range, yet a higher percentage of disorganized attachment (36%) was found in

the sample compared with the normative range (15%).

Children who have experienced more severe pre-adoption deprivation and neglect (e.g.,

some children from Romanian institutions) were more likely to form parent-child attachment

some years after adoption (O'Connor et al., 2003), however, Pugliese et al. (2010) found that

Chinese adoptees begin to develop attachment with adoptive parents in the six months since

adoption, with an increase of secure attachment behaviors and decrease in disorganized

attachment patterns. In another longitudinal study of Tan (2011), 842 Chinese adoptees'

behavioral adjustment was measured by Child Behavior Checklist (CBCL) at three

developmental phases. A significant improvement was found in both average and suboptimal

adjustment along with a significant behavioral continuity from Phase I to II.

Parenting styles & maternal responsiveness. Parenting models/styles constitute

important components of the conceptual framework for this study. Substantial differences of

parenting styles were found between Chinese and U.S. parents (Kisilevsky et al., 1998), thus

Chinese adoptees' response to adoptive parents' caregiving might change according to changes

brought by parenting approaches (Tan et al., 2012). Kaufman et al. (2000) maintained that

authoritative parenting is positively correlated with children' overall competence, whereas

authoritarian and permissive parenting styles are more likely to be related to behavioral and

developmental problems in children. Similar findings were found with children adopted from

China where a positive correlation was detected between authoritarian/permissive parenting and Chinese adoptee' behavioral problems, and a negative correlation between authoritative parenting with the problems (Tan et al., 2012).

Maternal responsiveness refers to the primary caregiver's ability to sense various cues that the infant exhibited and to respond to those cues on a consistent manner (Karl, 1995). Spera (2005, p. 135) provided a more general definition of it as "parental behaviors that intentionally foster individuality, self-regulation, and self-assertion in their children." It is also named as maternal/adult sensitivity in current literature. Maternal responsiveness plays an important role in adoptees' transitions and adjustment based on the theoretical framework and previous research. According to the attachment theory, maternal responsiveness helps foster secure child-parent attachment (Ainsworth et al., 1978). Aligning with this, Bowlby (1982) maintained that children develop trust in their mothers when receiving warm and responsive care. Appropriately and positively affective exchanges are the focuses of maternal responsiveness (Biringen & Easterbrokks, 2012).

Pre-adoption variables such as birth mothers' pregnant conditions, age, institutional experience, and political and cultural reasons play significant roles in IA children's post-adoption adjustment at different strength levels based on countries of origin. However, many IA children were found to gain overall developmental growths since adoption with sensitive care provided by adoptive parents (Palacios & Brodzinsky, 2010; Stams et al., 2002). The longitudinal study of Beijersbergen, Juffer, Bakermans-Kranenburg, and van IJzendoorn (2012) with 125 IA adolescents adopted before six months to Netherlands showed a positive relationship between maternal sensitivity and adolescents' secure attachment. The same study revealed that parents' consistent sensitivity in caregiving predicted continuity of secure

attachment in adoptees, whereas change from insensitive to sensitive caregiving resulted in a transition from insecure to secure attachment in adolescents. Another study (van der Voort, Linting, Juffer, Bakersmans-Kranenburg, Schoenmaker, & IJzendoorn, 2013) with 160 IA children from Sri Lanka, South Korea, or Columbia to Dutch showed similarly positive results. Van der Voort and colleagues conducted structural equation modeling to test relationships among sensitive parenting, children and adolescents' inhibited behavior, and internalizing problems. The findings supported that parental sensitivity in infancy predicted less inhibited behavior and fewer internalizing problems in adolescents. Maternal sensitivity is also reported as a significant predictor of later child-parent attachment and post-adoption adjustment. However, Tan et al. (2011) maintained that racial differences might mitigate adoptees' reactions to parenting responsiveness (Tan et al., 2011), as the differences were found to affect adoptees' feelings about the adoption relationship (Friedlander et al., 2000). Some overlaps can be found in parenting approaches in terms of care providing.

Questions to Be Explored in This Study

Attachment security and indiscriminate friendliness are dependent variables, whereas age when adopted, pre-adoption institutionalization experiences, time spent with adoptive parents, and adoptive parents' parenting styles are independent variables of this study. The study examines the relationship between the listed independent variables and the two dependent variables respectively. The study also assesses whether or not attachment security is associated with the level of indiscriminate friendliness in Chinese adoptees.

Research questions explored through this study are: 1) Are age when adopted, pre-adoption institutionalization experience, time spent with adoptive parents, and adoptive parents'

parenting styles significantly associated with the attachment security level in Chinese adoptees?

(See figure 2-1 for conceptual diagram of question one)
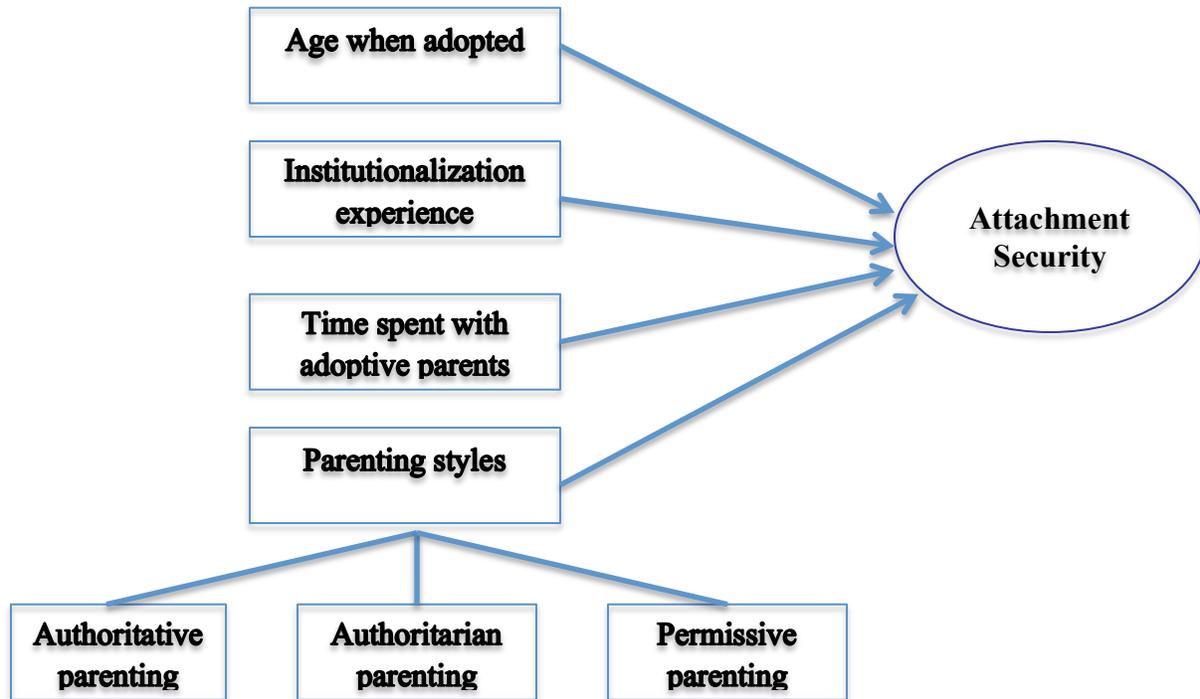
Figure 2-1. Conceptual Diagram of Question One

2) Are age when adopted, pre-adoption institutionalization experience, time spent with adoptive parents, and adoptive parents' parenting styles significantly associated with the level of indiscriminately friendliness presented by Chinese adoptees in this study? (See figure 2-2 for conceptual diagram of question two)
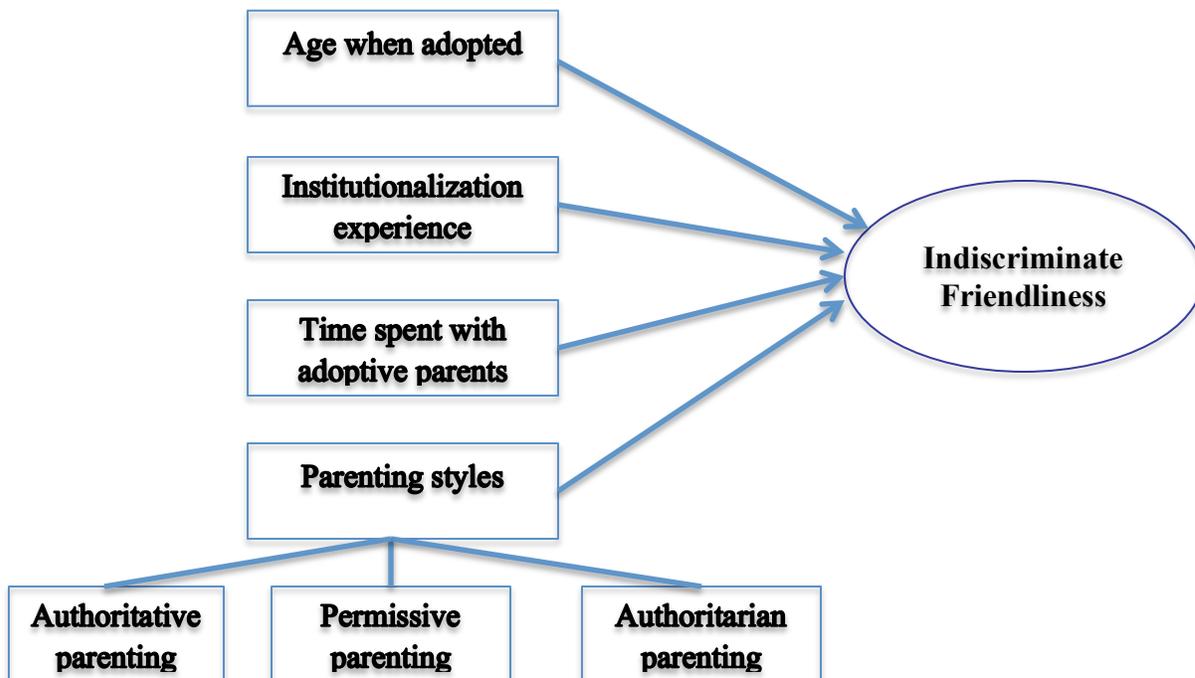
Figure 2-2. Conceptual Diagram of Questions Two

3) Is attachment security associated with presented indiscriminate friendliness in the sample Chinese adoptees in this study? (See Figure 2-3 for conceptual diagram of questions three)
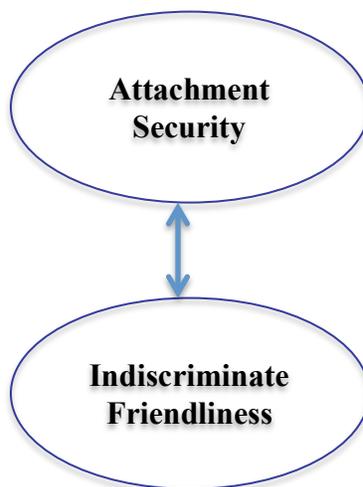
Figure 2-3. Conceptual Diagram of Questions Three

Multivariate hierarchical regression analysis is the main research design, which evaluates the importance of each variable in explaining the variance in attachment security and indiscriminate friendliness scores. Correlation between indiscriminate friendliness and attachment security is also assessed. The study does not answer what causes the attachment outcome or indiscriminate friendliness, or what can be led by the attachment status of adoptees, as variables are not controlled in the study.

Summary

In summary, studying post-adoption child-parent attachment in U.S. adoptive families with Chinese children has become an important topic, because of the large population of children adopted from China during the past two decades along with the increasing needs for adoptees, adoptive families, and mental health professionals working with the population. As little is known about Chinese adoptees' attachment and indiscriminately friendliness and relevant independent variables that may be associated with the two variables, this research is conducted to investigate each variable under the framework of attachment theory and parenting styles. This study is conducted to explore the above-listed research questions regarding attachment in Chinese adoptees, indiscriminate friendliness, and potentially significant variables.

Variables were selected according to the conceptual framework and previous findings. Three subscales of parenting styles are selected based on the conceptual framework. Other variables (i.e., time spent with adoptive families, previous institutionalization) were derived from previous studies. Children's age when adopted is related to the conceptual framework and were also found to be significant in previous studies. Although gender was found to be a significant variable, as showed in the meta-analysis of Stams et al. (2002), it is not be considered as a main variable for this study because of the imbalance of male and female adoptees according to the

statistics of U.S. Department of State (2014). Children's behaviors when adopted and family stress were discussed in literature review, however were not included in the main variables of this study due to the complexity of the study and time constraints. Implications to professionals in the counseling field are drawn from the study along with its limitations. Findings yielded are expected to guide counseling practices in working with international adoptive families, as well as to set agenda for future research.

Limitations

Several limitations may be involved in this study. Some questions in the measurement (e.g., question regarding adoptees' institutionalization history) need adoptive parents to recall things happened for quite a long time. This might add inaccuracy to the results due to time elapse, as children involved in the study will be selected based on the criteria that they were adopted under two years old and are currently under six years old, the study may involve difficulty in recruiting participants given the multiple screening criteria along with parents' engagement in work although are usually willing to participate in research.

Limitations regarding the design of the study include: 1) The hierarchical regression design makes it difficult to draw causal conclusions, as variables were not manipulated, and all variables were measured simultaneously at once; 2) Because all variables were measured using self-report instruments, potential limitations of social desirability and mono-method bias might be potentially introduced. Participants might have responded to the items based upon what they believed is socially desirable, and the shared variance among the variables might be partially due to the common method variance; and 3) Participants of the study are parents with Chinese adoptees in the United States. This might affect the generalizability of the findings to adoptive families with children adopted from other countries of origin other than China.

CHAPTER 3

METHODOLOGY

This study is proposed to examine important variables associated with attachment security and the level of indiscriminate friendliness in Chinese adoptees by U.S. parents. It also investigates the correlation between attachment security and indiscriminate friendliness. Little is known about post-adoption attachment between Chinese adoptees and their U.S. parents, current status of indiscriminate friendliness, and variables associated with both, this research thus is conducted to investigate multiple variables based on the conceptual framework and literature regarding IA children, Chinese adoption, attachment, and social behaviors. Multivariate hierarchical regression analyses will be conducted to examine the relationships between the variables and attachment security, and between the variables and indiscriminate friendliness, in order to evaluate the importance of each variable in explaining the variance in the security score and the level of friendliness. Correlations between attachment security and indiscriminate friendliness will also be checked using bivariate analysis. Important variables and instruments or measures for each variable will be discussed in this chapter.

Previous studies (Bruder et al., 2010; Cohen & Farnia, 2011 & 2011; Pugliese et al., 2010; Tan, 2011; Tan et al., 2012; Tan & Marfo, 2006; Tan et al., 2010) generated important variables regarding Chinese adoptees' post-adoption adjustment. Some studies (Friedlander, 1999; Mohanty & Newhill, 2005; van den Dries et al., 2009; van IJzendoorn & Juffer, 2006) focused specifically on IA children's attachment with adoptive parents. Data related to each variable were collected through participants' self-report on selected instruments and self-constructed demographic survey. Relationship between the outcome/dependent variables (i.e., attachment security and indiscriminate friendliness) and the selected predictor/independent variables (i.e.,

age when adopted, pre-adoption institutionalization history, time spent with adoptive parents, and adoptive parents' parenting styles) will be investigated to examine the extent to which each variable can explain the variances in outcome variables. The relationship between the two outcome variables will be examined, as to assess whether or not the adoptees' indiscriminately affectionate behavior is related to security in their attachment relationship with parents. Multicollinearity (Wold, Ruhe, Wold, & Dunn, 1984) will be checked among the variables, because multicollinearity does not reflect the true variance explained by each variable.

Participants

U.S. adoptive parents (mothers or fathers with children adopted from China) were recruited to participate in this study. Survey questions were answered by parents based on their subjective experience with their children. No children's input was involved, as it was not realistic to interview them due to their age, maturity level, the short amount of time that they spent in the U.S. since adoption, and/or language struggle.

Several recruitment criteria were used in screening participants for this study: (a) participants are white American parent(s) with adopted children from China, (b) participants involved in the study are heterosexual couples (this is related to China's international adoption regulations which eliminated same-sex parents and single parent adoption in 2008), (c) children adopted by participants of the study were under two-year-old (below 24 months) by the time of adoption, as the first two years are said to be critical for children to form attachment with caregiver according to attachment theory (Bowlby, 1969 & 1973), d) children of the participants are currently six years old or younger, because some instruments are not best applied to older children, and parents will be asked to recall and report previously happened things. A big time elapse may affect the accuracy of data. The meta-analysis of van den Dries et al. (2009) showed

that children placed at an elder age exhibited more risks of adjustment problems, so the age criteria were used to reduce confounding variables associated with children's age. More details regarding participant recruitment are provided in the following procedure section.

According to the G*Power 3.1 statistic calculator (Faul, Erdfelder, Buchner, & Lang, 2009), 100 participants seemed to be sufficient to conduct the study. Various recruitment approaches were used, and 92 participants filled out the online survey. In addition to the 92 participants, 39 parents actively reached out to express their interests in participating the study though the selection criteria kept them from participating. Information shared by the parents added valuable qualitative information related to the topic. Among the 92 participants, 29 have children beyond the age range set up for the study (i.e., the children's current ages are above six years old and/or adopted after 24 months). The independent t-test showed no significant difference between the 63 participants with children within the age range and the 29 who were beyond the age range, so the two groups of data were combined for final data analysis. Missing values were analyzed, remediation actions were taken, and all 92 responses were kept to ensure enough power for statistical analysis purposes.

Participants were white U.S. parents with children adopted from China. Three (0.03%) reported currently living overseas. The mean age of the 92 participants was 45.55 years (SD = 6.39), ranging from 31 to 59. Mothers of children composed the majority of the participants (93.5%; n = 86), and six (6.5%; n = 6) are fathers of the children. Participants who reported having only one child in their families accounted for 32.6% (n = 30), about 27.2% (n = 25) of the participants reported having two children (including the child described in the survey), and the rest 40% (n = 37) reported having more than two children in their families.

More than half of the participants held a Master's degree of higher. Participants who reported their highest level of education as finished some college accounted for 14.1% (n = 13), Bachelor's degree represented 22.8% (n = 21), finished some graduate studies was 15.2% (n = 14), Master's degree accounted for 40.2% (n = 37), and doctoral degree made up 7.6% (n = 7). The highest level of education obtained by spouses ranged from GED to doctoral degree, with 1.1% (n = 1) accounted for GED, 3.3% (n = 3) with high school diploma, 22.8% (n = 21) finished some college, 41.3% (n = 38) with a Bachelor's degree, 4.3% (n = 4) finished some graduate studies, 21.7% (n = 20) with a Master's degree, and 5.4% (n = 5) with a doctoral degree.

Sixty nice point six percent (n = 64) of the participants reported themselves as the primary caregiver of their children, and 30.4% (n = 28) reported themselves as equal caregiver (i.e., share the same amount of caregiving work in parenting the child). No one reported as the secondary caregiver of children. As for employment, 46.7% (n = 43) participants reported working above or equals to 20 hours per week, 19.6% reported working below 20 hours per week, and 33.7% reported no employment outside of home. Participants reported spouse employment above or equals to 20 hour per week accounted for 92.4% (n = 85), below 20 hours per week represented 2.2% (n = 2), and 5.4% (n =5) comprised no employment outside of home. Table 3-1 described the mean, standard deviation, skewness, kurtosis, and range for the continuous variable of participants (i.e., age). Table 3-2 included frequency information of categorical demographic variables (i.e., parenting role, number of children, education level of the participants and their spouses, current employment status of the participants and their spouses).

Table 3-1

Descriptive Statistics for the Sample Population

Variable	N	Range	Mean	Std. Deviation	Skewness	Kurtosis
Age	92	28	45.55	6.39	.28	-.034

Table 3-2

Frequencies Information for the Sample Population

Variable	Category	N	%
Identity	Mother	86	93.5
	Father	6	6.5
Parenting Role	Primary Caregiver	64	69.6
	Secondary Caregiver	0	0
	Equal Caregiver	28	30.4
Number of Children	One	30	32.6
	Two	25	27.2
	Three or Above	37	40.2
Education	Some High School	0	0
	GED	0	0
	HS Diploma	0	0
	Some College	13	14.1
	Bachelor's Degree	21	22.8
	Some Graduate	14	15.2
	Master's Degree	37	40.2
	Doctoral Degree	7	7.6
Spouse Education	Some High School	0	0
	GED	1	1.1
	HS Diploma	3	3.3
	Some College	21	22.8
	Bachelor's Degree	38	41.3

	Some Graduate	4	4.3
	Master's Degree	20	21.7
	Doctoral Degree	5	5.4
Employment	Above/Equals to 20 hrs/week	43	46.7
	Below 20 hrs/week	18	19.6
	No Employment	31	33.7
Spouse Employment	Above/Equals to 20 hrs/week	85	92.4
	Below 20 hrs/week	2	2.2
	No Employment	5	5.4

Dependent Variables & Measures

Attachment security & adapted AQS. This study is proposed to examine important variables associated with attachment security in Chinese adoptees. Two measures are predominantly used to assess the child-parent attachment quality in IA adoptive families. They are Attachment Q-Sort (AQS; Waters & Deane, 1985) and Strange Situations Procedures (SSP; Ainsworth et al., 1978). I chose the Attachment Q-Sort adapted version (adapted by Chisholm et al., 1995) to measure attachment security in this study.

Good convergent validity of AQS has been shown with .50 correlation between AQS scores and SSP results (Vaughn & Waters, 1990). Van IJzendoorn et al. (2004) reported modest stability of AQS for the first five years of children's life. Pool, Bijleveld, and Tavecchio (2000) applied the instrument to assess attachment security in 45 children with age range of two to six years old in the Netherlands. Scores of SSP are based on the researcher's perception of the child's response to the episodes and information is collected through standardized laboratory observation (Ainswroth 1979a & 1979b; Ainsworth et al., 1978). Two main drawbacks of the SSP related to its laboratory administration are recognized: 1) the researcher/observer has more control over the assessment environment, and they may need to satisfy certain standards to be

certified to use the instrument and to code data (Soloman & Geoge, 1999); and 2) the

interactions in laboratory settings may not show the most naturalistic reality at home, and it only

assesses a child's response to separation/reunion situations versus his/her natural behaviors home

(Teti & McGouty, 1996).

The original AQS includes 90 items and was designed by Waters and Deane (1985) to

measure attachment security in children between 12 and 36 months. The original AQS consists

of a number of cards with a specific behavior on each. Based on observation for a certain amount

of time, the mother/observer rank the cards into nine piles from "most descriptive of the child" to

"least descriptive of the child." The AQS security score is generated through the correlation

between the mother/observer's Q sort and the expert's sort describing the same behavior,

possibly raking from -1.0 to 1.0. The meta-analysis by van IJzendoorn, Vereijken, Bakermans-

Kranenburg, and Riksen-Walraven (2004) provided evidence for the validity of AQS used by

several studies in assessing attachment security/quality in infants/young children.

The adapted version of AQS (Waters & Deane, 1985) was initially used by Chisholm and

colleagues (1995). The adapted AQS consists of 23 items and involves using the mother as the

observer. It converts the original Q sorts to a scale format, using a five-point Likert scale ranging

from 1 = "very unlike my child" to 5 = "very like my child". Sample items in the adapted version

are "Your child readily shares with you or lets you hold things if he/she is asked to", "When you

pick your child up, he/she puts his/her arms around you or puts his/her arm on your shoulder". A

higher score on the items indicate a higher level of attachment security in a child. Reliability and

validity of the adapted AQS has been proved in previous studies (e.g., Chisholm et al., 1995;

Chisholm, 1998) with reported α coefficients of .65-.72 (Chisholm et al., 1995) and .77-.80

(Chisholm, 1998). Similar to the applicability of the original AQS, the adapted version has been

used to assess attachment security in IA children with age range of two to six years in the United

States (Bartel, 2005). Reliability test was conducted for the AQS adapted version in the current

study, and the Cronbach's alpha value was .83. Using the scale to measure attachment security

allows more individual differences in children in terms of the quality of attachment relationship

compared with general classification of attachment styles. Participants (either mother or father)

play the observer's role and provide response to each item. Using parents as the observer

guarantees the accessibility to behaviors of the children and adds naturalistic elements compared

with using the standardized laboratory administration to assess the behaviors.

Indiscriminate friendliness and five-item scale. Another dependent variable of this

study is indiscriminate friendliness in Chinese adoptees. The most widely used measure for this

construct is the five-item Indiscriminate Friendliness scale (Chisholm et al., 1995). The measure

consists five items assessing: 1) the child's level of friendliness toward new adults, 2) if the child

has been shy in front in a strange manner, 3) child's behaviors when meet with strangers/new

adults, 4) the likelihood of the child to go home with new adults met, and 5) the child's tendency

to wander. In the original measure, respondents give a score of "1" if indiscriminate friendliness

was identified and "0" if not (Chisholm et al., 1995). Bartel (2005) assigned scores of 0 to 3 or 0

to 5 to each item and summed the scores of items used. The original scaling was used in this

study based on better Crobach's alpha values. The Crobach's alpha coefficients of the five-item

Indiscriminate Friendliness were reported as .58-.72 (Chisholm, 1998), .78-.81 (Pears et al., 2011;

with dropping the last item), and .65 using only the first three items (van den Dries et al., 2012).

Cronbach's alpha was found to be much larger with the original scaling which was thus

adopted for this study. Cronbach's alpha value was .46 (with all five items included), .44 (with

the first four items included), and .58 (if only the first three items were included). Following

previous research (van den Dries et al., 2012) studying the indiscriminate friendliness level in Chinese adoptees, scores for only the first three items were used to ensure the reliability level of the instrument.

Independent Variables and Measures

 Age when adopted & time spent with adoptive family. Age when adopted (Bakermans-Kranenburg et al., 2005; Smyke et al., 2010; Stams et al., 2002; van Londen, et al., 2007) and time spent with adoptive parents (Juffer & van IJzendoorn, 2005; van den Dries et al., 2008) were found to be significant variables associated with IA children's post-adoption adjustment and development in previous studies. A demographic information survey were devised to collect basic information about children, participants, and family dynamics. The section included questions about child's gender, current age, participants' age, gender, education, family income, and family structure and so forth. Information about age when adopted and time spent with adoptive family and time spent with parents will also be obtained through the questionnaire.

 Pre-adoption institutionalization experiences. Studies (e.g., van den Dries, et al., 2009; Zeanah, et al., 2005) on institutionalized IA children showed higher rates of disorganized and insecure attachment compared with non-adopted peers. Indiscriminately friendly behaviors were found in IA children despite good-quality institutional care they had received prior to adoption (Chisholm, 1998; van den Dries et al., 2012). Institutional care was measured by parents' self-reports on children's length of institutionalization (Stams et al., 2002; van den Dries et al., 2009), weight range of children when adopted, and participants' perception of the institutional care. Because it was unlikely to gain first-hand data on children's institutionalization condition and no formal assessment was found to measure institutional care, questions were self-constructed. The

questions constructed to measure adoptees' institutionalization experiences are: 1) Was your child in a Chinese orphanage for more than 6 months before arrival (answers of "Yes" or "No"), 2) Weight of your child when adopted was: 1 = below average; 2 = within normal average; 3 = above normal average; and 4 = don't know; and 3) what's your perception of the quality of the care that your child received in the orphanage? (1 = Was not in an orphanage; 2 = High quality care; 3 = Acceptable quality care, and 4 = Poor quality care). Parents' knowledge of the institutional care was also assessed with an additional question: How much do you know about the quality of your child's experiences in China prior to adoption? (1 = I know nothing about it; 2 = I know little about it; 3 = I know some about it; 4 = I know pretty much about it; 5 = I am very knowledge about it). Responses to the question provided insight on the accuracy of parents' perception of their children's institutionalization experience.

Parenting styles & measures. Authoritative parenting was found to be positively associated with children's competence (Kaufmann et al., 2000) and negatively related to the number of behavioral problems in Chinese adoptees (Tan et al., 2012). A positive relationship existed between permissive parenting and adoptees' internalizing and externalizing behavioral problems (Tan et al., 2012). A core component of authoritative parenting is high level of parental responsiveness showed toward children's needs (Baumrind, 1978). Two measures were tentatively selected to measure parenting styles (Parenting Styles and Dimensions Questionnaire-Short; PSDQ; Robinson, Mandleco, Olsen, & Hart, 2001) and maternal responsiveness (The Maternal Infant Responsiveness Instrument; MIRI; Amankwaa & Pickler, 2007). PSDQ-Short (Robinson et al., 2001) was finally selected to measure parenting styles in this study, because it measures scores for the three primary parenting styles proposed in conceptual framework.

The Maternal Infant Responsiveness Instrument (MIRI, Amankwaa & Pickler, 2007) was designed to measure newborns and infants (under 18 months). Parenting Styles and Dimensions Questionnaire (Robinson, Mandleco, Olsen, & Hart, 1995) and its short version (Robinson et al., 2001) have been successfully used with older children. The MIRI instrument was dropped due to the age range of children in this study and overlaps between the two measures (both focus heavily on parents' responsiveness to children's needs).

The original Parenting Styles and Dimensions Questionnaire (PSDQ) including 62 items was developed by Robinson et al. (1995) to measure parenting styles of both mothers and fathers of children from four to 12 years old based on Baumrind's (1966) typologies of parenting models. Parents are asked to respond to specific behaviors used by themselves and their spouses in the process of interacting with children. Questions are five-point Likert scale items from "1" (= never) to "5" (= always). The Cronbach alpha coefficients for the measure was reported to range from .75 to .91 for the three parenting dimensions (i.e., authoritative, authoritarian, and permissive).

The abridged PSDQ was developed by the same authors (Robinson et al., 2001) using Structural Equation Modeling (SEM). PSDQ-short is comprised with 32 items to measure Baumrind's typology of parenting styles, including 15 items for Authoritative Parenting, 12 items for Authoritarian Parenting, and five items of Permissive Parenting (Robinson et al., 2001). The SEM standard coefficients reported are: .43-.74 (15 items of authoritative parenting), .43-.84 (12 items of authoritarian parenting), and .37-.78 (five items of permissive parenting). Participants are asked to assess their own parenting behaviors or these of their spouses using five-point Likert scales. Alpha coefficients were 0.85 (authoritative), 0.71 (authoritarian), and 0.66 (permissive) in Tan et al.'s (2011) study. Alpha coefficients for this study were 0.84

authoritative), 0.71 (authoritarian), and 0.68 (permissive). Table 3-3 shows the reliability of all scales measured in this study.

Brief Social Desirability Scale

As a limitation of self-reported surveys, participants are likely to provide responses that are considered as socially acceptable. The Brief Social Desirability Scale (BSDS; Haghighat, 2007) thus was used to check participants' tendency to provide socially desirable answers to particular questions. The BSDS includes four questions (with answers of "Yes" or "No"). The four questions are: 1) "Would you smile at people every time you meet them?"; 2) "Do you always practice what you preach to people?"; 3) "If you say to people that you will do something, do you always keep your promise no matter how inconvenient it might be?"; and 4) "Would you ever lie to people?" Participants' may score from 0 to 4. The higher a participant scored with BSDS, the more likely it is that the participant to provide socially desirable responses. Cronbach's alpha of the scale was reported as .6 (Haghighat, 2007) and was very low (< .30) in this study which was considered as not acceptable for practical purposes. Scores of the scale were not used in assessing/screening participants' responses.

Table 3-3

Reliability of Scales

Scale	Cronbach's alpha
Attachment security	.83
Indiscriminate Friendliness	.58
Authoritative Parenting	.84
Authoritarian Parenting	.71
Permissive Parenting	.68
Institutionalization	.44

Procedures

     Recruitment. Participants were successfully recruited through agencies and social-media

groups in previous research on Chinese adoptees (Tan, Marfo, & Derick, 2010). Different

channels of recruitment were utilized in this study including contacting Families with Children

from China (FCC) local chapters, adoption agencies, network, and social media. More than 50

FCC local chapters in the U.S. were contacted. The study gained positive responses from

coordinators of several FCC chapters (including branch chapters in Florida, California, Northern

Carolina, Pennsylvania, New York, Ohio, and Washington D.C.).

     Adoption agencies' information was gained through adoptive parents from social network

and experts in adoption research at the Pennsylvania State University. Agencies specializing in

Chinese adoption are expected to be an important source of recruitment. Agencies considered are

Chinese Children Adoption International, Living Hope Adoption in Philadelphia, China

Adoption with Love, Alliance for Children, and the Great all China Adoption. Two other

agencies with international services were also recommended by an expert in adoption research: Adoption from the Heart in Philadelphia and Adoption Together in Maryland. Four agencies were contacted through email (with recruitment letter) and phone calls. One agency (Living Hope Adoption) actively participated in the recruitment process and shared information about this study with potential participants.

The study was endorsed by administrators of multiple social media groups consisted of parents with children from China including Chinese Adoptive Families, Chinese Adoption, China Report, Families with Children from Jiangxi China, Chinese Adoption Special Needs. Parents and organizations from professional network also helped facilitate data collection. The research information (including a *Letter to Parents* and a *Research Flyer* about this study) was exhibited in one of the major annual events of Families Blessed with the World's Children (FBWC), a volunteer-run, non-profit organization. (See appendix F for letter to parents and appendix for research flyer exhibited by FWBC)

Participants recruited represented different geographic areas from various states in the U.S. *Letter to Parents* was shared with potential participants through the above-mentioned channels. Information such as purpose of the study, its significance, confidentiality, participation procedures, and researcher's contact was included in the letter. The letter was shared through email, hardcopies, or group system messages by administrators of social media groups. Both paper and electronic versions of instruments were prepared. All participants chose to fill out the survey online. Participants who agree to take part in the study had the choice to directly contact the researcher or to have the agency director/group coordinator share their contact information with the researcher. A letter to agencies was also drafted in communicating with adoption agencies. (See appendix G for letter to adoption agencies)

Sample size. Sample size for this study is estimated by using the G*Power 3.1 statistic calculator (Faul et al., 2009). G*Power can be used to determine sample size and for power analysis of the study. Because the study was proposed to use the hierarchical regression design, testing the significance of the F-value is needed. Entering a medium effect size of .15 as specified by the software the number of independent variables, with two dependent variables, at the alpha value equals to .05 significance level, ideally 107 participants would be needed for this study to reach a .95 power $(1 - \beta$ error probability). It was expected to recruit approximately 100 participants to guarantee the power of the study, however, the study ended up with 92 participants. An addition of 39 parents reached out through email or social media and shared important information related to the topic, which yield rich qualitative information. About 20 parents expressed interests to participate in the study, however were restricted by the selection criteria. Local FCC chapter coordinators and an expert in Chinese adoption research were consulted regarding the shortages of participants, all of whom shared that due to the change of policy in Chinese adoption and expenses added to the adoption process, there was a sharp decrease in the number of children adopted at an early age (under two to three years old) after 2010.

Data collection. Before collecting data, approval of this study by the Institutional Review Board (IRB) at the Pennsylvania State University was obtained. The online survey protocol was officially initiated in January 2015 upon receiving the IRB approval. Adoption agencies and FCC chapters were contacted through email, phone call, and/or site visits. Introduction of the study along with the invitation letter to parents will emailed/mailed to agencies and posted on the webpage of social-media groups. Survey questions were designed and posted through PsychData which has been utilized and well evaluated by many studies (e.g., Courtney, Joe, Rowan-Szal, &

Simpson, 2007; Rowan-Szal, Greener, Joe, & Simpson, 2006) in social sciences. According to the IRB guideline, parents were allowed to quit participation at any point of time they wanted. Information related to the purpose of the study, procedures, potential risks and benefits, estimation of participation time, confidentiality, and contact information was included in a formal letter shared with parents before participating in the study. Follow up emails and online posts were sent to achieve the expected sample size. The online protocol of the study was ended the last day of March 2015. Data collected through PsychData was downloaded in SPSS format for later management and analysis.

Research Design

Multivariate hierarchical multiple regression analyses will be used for this study, based on the fact that multiple regression is appropriate to explain or predict dependent/criterion variable by multiple well-selected predictors (Azen & Budescu, 2003). Two dependent variables are included in this study, so hierarchical regression will be run with the two variables respectively and their relationship with four independent variables. Multiple regression is used to produce the best combination of predictors for one criterion variable while several independent variables were identified (Mertler & Vannatta, 2002). Stepwise analysis and hierarchical regression are two main approaches of multiple regression (Hunsley & Meyer, 2003). Hunsley and Meyer mentioned that with stepwise, the order of variables were entered based on the degree of association between a predictor and the outcome variable evaluated by computer, whereas in hierarchical analyses the order of variable entry can be specified by the researcher. Thompson (1995) called hierarchical regression a preferable approach, as stepwise may yield non-generalizable results because of capitalization of sampling error. Hunsley and Meyer (2003)

suggested serious consideration to be given to the order of entering variables with the general rule that demographic information and archival data go before psychological measures.

   Hierarchical regression is frequently used to analyze effect of an independent variable while controlling for other variables. It is an efficient analysis tool when variance of a dependent variable is being predicted or explained by independent variables which are correlated with each other (Pedhazur, 1997), as in this study, some selected independent variables can be correlated. Hierarchical regression is often used to test theory-based hypotheses, specifying key predictors without reducing R^2 coefficient. In this study, predictors were mainly selected based on the attachment theory, parenting styles, and previous studies related to international adoption.

   A common threat to internal validity of multiple regression research design is multicollinearity with regression variables confounding with each other in a way that the presence of one variable is likely to influence the predictive power of the other (Onwuegbuzie, 2000). Onwuegbuzie emphasized that multicollinearity also leads to inflated statistical coefficients, thus provides rival interpretations for the findings. Onwuegbuzie listed specificity of variables and misspecification error as two common threats to external validity of the research design. Seven ways that specificity of variables can be a threat to external validity are "type of participants, time, location, circumstance, operation definition of independent variables and dependent variables, and types of instruments used." (Onwuegbuzie, 2000, p.44). Misspecification involves omission of important variables such as interaction terms in multiple regression, and the omission decreases external validity because findings may be different if include the variables. Because this study will look at the relationship between the variables and the two outcome variables, interactions of variables (e.g., interaction of "time spent with adoptive parents" and "parenting styles") will be examined. Attention may need to be paid to the

centering of continuous predictor variables and to report the probing of significant interaction

terms (Petrocelli, 2003). (See figure 3-1 for conceptual diagram of research design; see figure 3-

2 for research design)
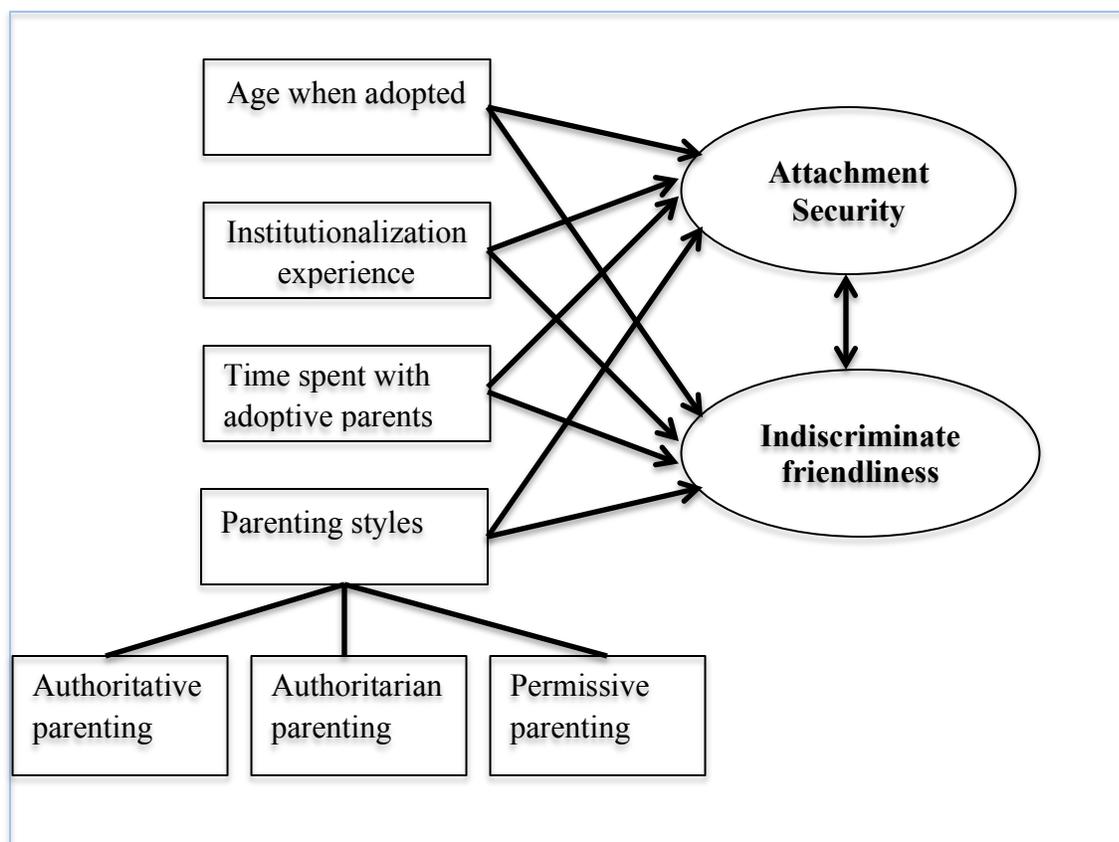
Figure 3-1. Conceptual Diagram of Research Design
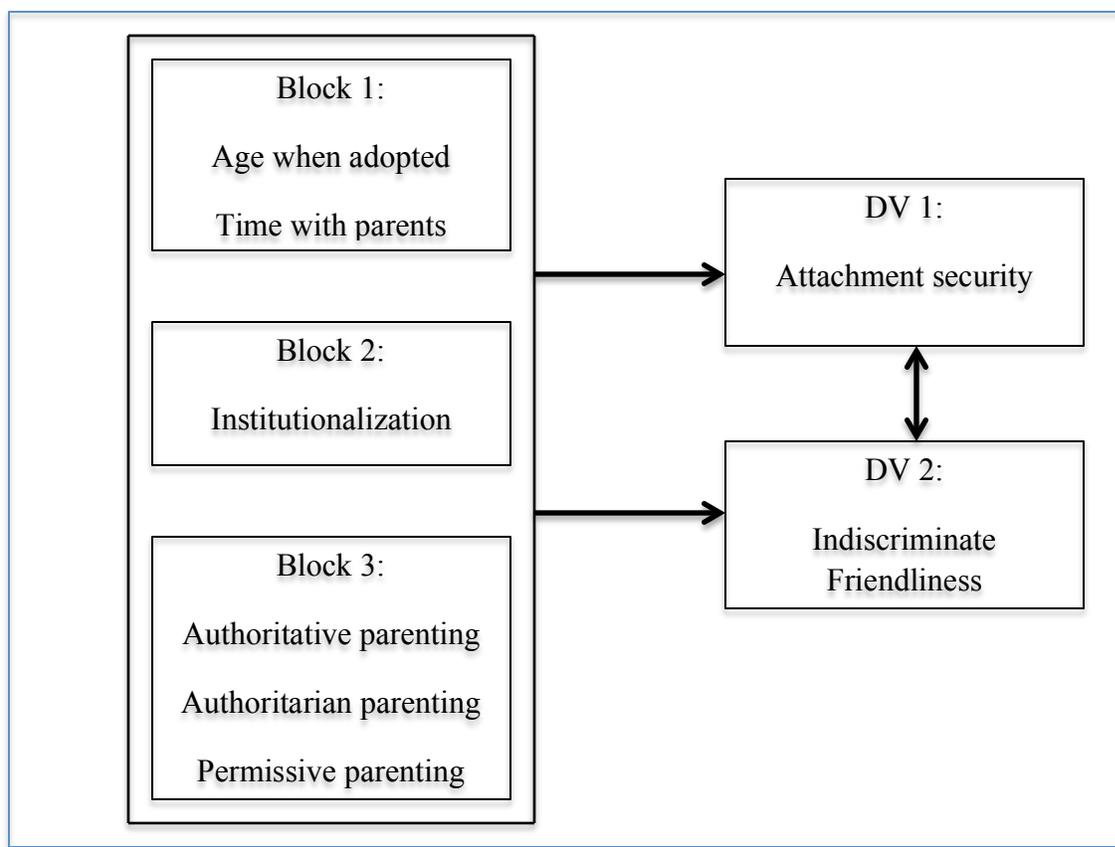
Figure 3-2. Research Design

Note: Blocks are the order to be entered into the multiple hierarchical regression models; DV =

    Dependent Variable

Data Analysis

   Screening Procedures. Screening procedures were taken before conducting main

analysis. Data were imported from PsychData to SPSS 20. Ninety-two participants filled out the

online survey posted on PsychData. Among the 92 participants, 29 have children beyond the age

range set up for the study. The independent t-test showed no significant difference between the

63 participants with children within the age range and the 29 who were beyond the age range.

Further t-test analysis was conducted with the 29 participants who were beyond the selection

criteria. Two groups were created (Group 1 = Children adopted after 24 months old, $n_1 = 7$;

Group 2 = Children who are currently above six years or 72 months old, n_2 = 18). Children who fell into both groups were deleted from analysis. No significant difference was detected in attachment security and indiscriminate friendliness scores. Table 3-4 illustrates the independent t-test results in attachment security and indiscriminate friendliness between the 63 participants within the age range and the 29 beyond the range; and between the two age groups beyond the age selection range.

Table 3-4

T-Tests Output Between Age Range Groups

	Dependent Variable	t value
Within & Beyond Age Range	Attachment Security	.51
n_1 = 63, n_2 = 29	Indiscriminate Friendliness	-.54
Adopted > 24 mos & Currently > 6 yrs	Attachment Security	1.38
n_1 = 7, n_2 = 18	Indiscriminate Friendliness	.72

Note: p for all t values > .01; mos = months; yrs = years

Assumption tests (i.e., dependent variables are on a continuous scale; the independent variable consists of two categorical, independent groups; independence of observations between the two groups; there are no significant outliers; dependent variables seem to be normally distributed for each group of the independent variable; and there is homogeneity of variances according to Levene's test on SPSS) were conducted before carrying out the independent t-test. No violations were identified, so all the 92 cases were kept in the dataset to ensure enough power for statistical analysis.

Missing data. Eight participants chose not to report their age. Seven participants did not respond to "Spouse Education" and "Spouse Employment". All three demographic variables are

not the target variables focused by this study, thus these missing data were treated as ignorable missing data (Sterner, 2011). Six participants answered a majority part of the survey (i.e., more than 60%), so their responses were kept and the missing data were imputed with their regression values according to SPSS Missing Value Analysis (MVA).

Coding and subscale scoring. Items were coded according to the original coding instruction of instruments. According to instrument guidelines, some items with reverse coded (e.g., items of 5, 7, 11, 13, 14, 17, 18, 19, 21 and 22 of the AQS-Adapted). Results of the reverse coded items and the ones remaining unchanged for the AQS-Adapted were summed up as the Attachment Security score (i.e., the first dependent variable). Either "0" or "1" was assigned to participants' responses of each item in the five-item indiscriminate friendliness scale. Scores were summed up for the first three items and were treated as scores for Indiscriminate Friendliness (i.e., the second dependent variables). Scores for the independent variable "Months Spent with Parents" were obtained, using "Children's Current Age" minimizing "Children's Age When Adopted". "Parenting Styles" were coded into three subscales (i.e., Authoritative Parenting; Authoritarian Parenting; and Permissive Parenting) by adding particular items under each subscale respectively. Institutionalization score was gained by adding together the three self-constructed items (i.e., length of institutionalization; weight range of children when adopted; participants' perception of children's institutionalization experience). Categorical variables were coded using dummy coding. SPSS Exploratory Data Analysis including percentiles and histograms was performed and outlier labeling rules were applied to detect outliers.

Power analysis. Power of statistic tests refers to the probability of yielding significant results by the tests (Cohen & Cohen, 1983). It yields an estimate to the probability of rejecting a false null hypothesis. G*Power 3.1 statistic calculator (Faul et al., 2009) was used for power

analysis. As analyzed in the sample size section, obtaining the number of participants is necessary to achieve acceptable power, usually to strive for a desired power of .95 but a minimal power of .8 may also be acceptable in social sciences (Cohen & Cohen, 1983).

Preliminary analysis. Before main analysis was conducted, assumptions for multivariate procedures were checked before. Data for several variables were transformed to reach normal distributions. Univariate analysis was conducted with each variable selected for this study. Range, mean, median, and standard deviation of each variable were produced by statistical software. Upper and lower boundaries were calculated to inspect outliers for each variable, as true outliers can influence data distribution, and adjustment for outliers may be made to reach more optimal results (Chen & Popovich, 2002). Bivariate analysis was conducted through examining correlations between variables. Bivariate analysis results were yielded through scatterplots. Inclusion of bivariate correlation analysis along with final regression model may help contribute to future research in the field, such as to be referred by future meta-analysis studies (Trusty, Thompson, & Petrocelli, 2011). Bivariate analysis provided answer for the third research question: 3) Is attachment security significantly associated with presented indiscriminate friendliness in the sample Chinese adoptees in this study?

Regression assumptions. Statistical assumptions were checked before testing the regression equation. Assumptions tested are: 1) the errors have a mean of zero, regardless of the values of the criterion/predictor variables, 2) the errors have the same theoretical variance, σ^2, 3) the errors have a normal distribution, and 4) the errors are independent from each other and are independent of any time order in the data. Transformation of data were conducted to reach improve the skewness of data.

Multiple regression analyses. Multiple hierarchical regression was performed by entering independent variables into three different models with attachment security and indiscriminate friendliness. Variables were entered hierarchically into the regression models based on the importance of each variable according the conceptual framework and literature review of this study (Trusty et al., 2011). Incremental increase in R^2 along with significance level was reported with each model entered. Important demographic variables based on literature were entered into the first model. Children's age when adopted and amount of time spent with adoptive parents were entered into the first model of this study based on significant relationships between the variables and children's adjustment outcomes (Bakermans-Kranenburg et al., 2005; Juffer & Van IJzendoorn, 2005; Stams et al., 2002; van den Dries et al., 2008). Institutionalization (i.e., the child's pre-adoption institutionalization experiences), and the three subscales of parenting styles (i.e., Authoritative Parenting; Authoritarian Parenting; and Permissive Parenting) were entered into the second and third models respectively. The same procedures were conducted with each of the two dependent variables (i.e., attachment security and indiscriminate friendliness).

The three models were sufficient to answer the first two research questions of this study:

1) Are age when adopted, pre-adoption institutionalization experience, time spent with adoptive parents, and adoptive parents' parenting styles significantly associated with the attachment security level in Chinese adoptees?

2) Are age when adopted, pre-adoption institutionalization experience, time spent with adoptive parents, and adoptive parents' parenting styles significantly associated with the level of indiscriminately friendliness presented by Chinese adoptees in this study?

The results also showed the amount of variances that each model could explain, as well as how much influence each variable had on predicting adoptees' attachment security and indiscriminate friendliness. Correlation analysis was conducted to test the hypothesis for the third question that attachment security is negatively associated with indiscriminate friendliness presented in children of the sample in this study. A fourth model was added to further examine the relationship between particular independent variables (i.e., potential interaction effects) of the variables. Four interaction variables were entered into the fourth model of the hierarchical regression including age when adopted x institutionalization (Interaction 1), months with parents x institutionalization (Interaction 2), months with parents x authoritative parenting (Interaction 3), and institutionalization x authoritative parenting (Interaction 4). The model yielded non-significant results.

CHAPTER 4

RESULTS

This chapter presents the findings of this study including procedures of dealing with

missing data, outliers, univariate analysis, and bivariate analysis, as well as results of the

hierarchical multiple regression analysis for the first two research questions of this study. Based

on the findings, potential effects of interaction terms between independent variables on

dependent variables were also checked.

Missing Data

Addressing and reporting missing data is an important step before taking any advanced

statistical procedures, as failure to address missing values may threat to internal and external

validity (Sterner, 2011). Handling missing data went as the first step of data analysis of this study.

Eight participants chose not to report their age. Seven participants did not respond to "Spouse

Education" and "Spouse Employment". All the three (i.e., participants' age, education level, and

employment) are demographic variables that were not closely related to the dependent variables

investigated in this study. Six participants answered a majority part (i.e., more than 60%) of the

whole survey including all demographic survey items, the AQS-Adapted questions, the five-item

Indiscriminate Friendliness Scale and the first few questions on PSDQ. Items where participants

responded with "I don't know" (i.e., length of time the child was institutionalized) were also

treated as missing items. Before taking any remediation actions about these missing data, the

types of missing data were investigated.

Previous articles (Graham, 2009; Sterner, 2011) categorized three types of missing data

and presented various approaches of handling them. The three types of missing data are missing

completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR),

among which MNAR is viewed as the most problematic, as it is said to be non-ignorable (Sterner, 2011). Sterner (2011) recommended using both software calculation (e.g., SPSS Missing Value Analysis; MVA) and the researcher's judgment based on the design of the study to decide the type of missing data in a study.

As the Expectation Maximization (EM; Little's MCAR test) under the SPSS Missing Value Analysis (MVA) yielded a significant value of the chi-square test smaller than .05, the missing data in this study were not considered as MCAR (Sterner, 2011). The demographic variables (e.g., spouse education and employment; participants' age; number of children that participants have) were not variables in the regression model of this study. However, they may be related to the values of dependent variables, thus were treated as auxiliary variables (Graham, 2009). Collins et al. (2001) emphasized the importance of including auxiliary variables in the missing data model as it reduces estimation bias and can restore part of lost power due to the missing values. The missing values in the PSDQ survey were viewed as one of the core independent variables in the regression model of this study, and keeping the responses helped preserve important characteristics of the original dataset as a whole (Graham, 2009).

Based on analysis of the missing values, all missing data were treated as missing at random (MAR) or conditionally missing at random. Graham (2009) summarized both old and modern methods of handling missing data. The old methods include complete cases analysis or listwise deletion, pairwise deletion (often used in conjunction with a correlation matrix), and mean substitution. The modern missing data analysis approaches are the EM algorithm, multiple imputation under the normal model, and ML/full-information maximum likelihood (FIML) model. Imputation of regression values is appropriate in handling MAR missing data (Graham, 2009; Sterner, 2011), so missing values were substituted by regression values yielded through

MVA. Two digits after decimals were kept when imputing the regression values, because rounding can potentially add more variability to the imputed values (Graham, 2011).

Outliers

Outliers refer to observations that fall into different distributions from the rest of the dataset. True outliers can significantly affect statistical analysis of a study and are likely to lead to erroneous results (Schwertman, Owens, & Adnan, 2004). Necessary actions may be taken if trues outliers are detected from a dataset (Hoaglin, Iglewicz, & Tukey, 1986). True outliers for individual variables in this study were identified through calculating upper and lower extremes of each variable. Hoaglin et al. (1986) suggested two formulas for calculating upper and lower values:

1. Upper = Q_3 + g*(Q_3-Q_1)

2. Lower = Q_1 - g*(Q_3-Q_1)

Q_3 refers to the 75th percentile (the third quartile) value of a variable and Q_1 means the 25th percentile (the first quartile) value of the variable. The g value refers to the turning parameter which was originally set at 1.5 and then was substituted as 2.2 (Hoaglin et al., 1986; Hoaglin & Lglewicz, 1987). Upper and lower values for independent and dependent variables were calculated using the formula and quartile values yielded by SPSS (descriptive statistic).

None of the extreme values identified by SPSS (through the explore outlier function) fell beyond the upper and lower values of attachment security (U = 133.8, L = 37.95) and indiscriminate friendliness (U = 6.4, L = -4.4), so no true outliers existed for the two dependent variables. Four cases were identified as outliers for age when adopted (case #11, #4, #59, and #91) for exceeding its upper boundary (U = 42.2). One case (#27) was identified as the outlier of months with parents. Case #55 was identified as an outlier of authoritative parenting. As

discussed previously, the dataset includes all participants' responses covering a wide age range of children (for both age when adopted and their current age), which probably led to the outliers in the two demographic variables. Instead of deletion from the original dataset, the two variables were transformed so as to keep important characteristics of the original data while decreasing the influence of outliers.

Univariate Analysis

Univariate analysis (also called exploratory approach) involves exploring data for each individual variable. Univariate analysis usually consists of procedures prior to formal statistical inferences (Hoaglin, 2001). Procedures covered in univariate analysis include: graphical display (to gain a general distribution and patterns of data), mathematical transformation (e.g., square root, power, or logarithm transformation), resistance (to gain a sense of unusual patterns in data), and residuals (Hoaglin, 2001). Univariate analysis was performed and yielded descriptive statistics, evidences for mathematical transformation of data, and graphical and residuals demonstration of assumptions testing for proceeding multivariate procures.

Descriptive Statistics

Descriptive statistics present properties location, scale, central tendency (mean, median, mode), and measures of spread (skewness and kurtosis) of univariate distributions. Descriptive statistics are significant in determining whether patterns of univariate distributions fulfill the assumptions and conditions for multivariate analysis using the variables. Table 4-1 shows descriptive statistics of independent and dependent variables investigated in this study. Range, mean, standard deviation, skewness, kurtosis, standard error of skewness, and standard error of kurtosis are included in the table. The mean and standard deviation of Age When Adopted (i.e., child's age at arrival) was ($M = 18.80$, $SD = 15.00$; "month" was used as the measuring unit).

The mean and standard deviation of Months with Parents was (*M* = 61.13, *SD* = 51.67; "month" was used as the measuring unit).

Standard deviations for the Age When Adopted and Months with Parents were large because the dataset includes all participants' responses involving children with wide age ranges (at arrival: 5~114 months; current: 24~235 months). Descriptive statistic results showed no significant differences in all other variables other than children's age, so both variables were kept. Logarithmic transformations were made for later analysis after the assumptions tests were conducted. The mean and standard deviation of the two variables after logarithmic transformation were Age When Adopted (*M* = 1.20, *SD* = .22) and Months with Parents (*M* = 1.61; *SD* = .43).

Table 4-1

Descriptive Statistics for All Variables in the Current Study (N = 92)

Variable	Range	Mean	Std. Deviation	Skewness	Kurtosis
Age When Adopted	109	18.80	15.00	3.97	19.90
Months with Parents	228	61.13	51.67	1.36	1.39
Institutionalization	6	4.97	1.48	.84	.357
Authoritative Parenting	33	63.13	5.89	-.63	1.22
Authoritarian Parenting	18	18.04	3.54	.84	.80
Permissive Parenting	11	9.96	2.59	.88	.58
Attachment Security	59	85.21	12.37	-.65	.20
Indiscriminate Friendliness	5	1.25	1.16	.95	.41

Note: Standard Error of Skewness = .25; Standard Error of Kurtosis = .50

Testing Three Assumptions

Assumptions (i.e., normality, linearity, and homoscedasticity) for multiple linear regression should be tested according to the design of the study (Osborne & Waters, 2002; Tabachnick & Fidell, 2007). Violation of assumptions may lead to Type I or Type II error, or result in erroneous estimation of significance and/or effect size (Osborne & Waters, 2002). Data transformation is needed if evidences shown supported that any of the assumptions is violated. The three assumptions tested for the current study is normality, linearity, and homoscedasticity.

Normality. Osborne and Waters (2002) indicated that researchers may identify violation of normality through visual inspection of data plots, skewness, kurtosis, and P-P plots and Kolmogorov-Semirnov tests. Skewness and kurtosis were used frequently to check the normality of data distribution. Normality is violated if the skewness value divided by the standard error of skewness value of a variable is larger than the absolute value of two (Tabachnick & Fidell, 2007). Under this circumstance, transformation of data is needed to achieve the normality assumption. Power transformation, square root transformation, and logarithmic transformation are common types of transformations (Tabachnick & Fidell, 2007), of which square root and logarithmic transformations are often used to adjust positively skewed data, whereas power transformation is usually applied to transform data with negative skewness.

The absolute value of the ratio of skewness and standard error of skewness for attachment security and authoritative parenting were slightly larger than two. There seemed to be slightly negative skewness (approximate normality) in data distribution of the two variables. Different forms of transformations were conducted, however, none of the transformations enabled the data to be normally or approximately normally distributed. The original scores of the two variables were thus kept for proceeding analysis.

Indiscriminate friendliness, age when adopted, months spent with parents, institutionalization, authoritarian parenting, and permissive parenting were all found to be positively skewed. Age when adopted and months spent with parents were severely positively skewed. Both square root and logarithmic transformations were tried for each of the variables, and logarithmic transformation adjusted the distributions to a better level. The variables were thus transformed using the logarithmic computation in SPSS, which provides approximately normal distributions of the scores.

Linearity. Osborne and Waters (2002) suggested that it is essential to examine if the relationships between dependent variable and independent variables are linear before conducting any multiple regression analysis, as multiple regression can only reflect accurate estimate of linear relationships. If the relationships are non-linear, the results then will under-estimate the true relationships between the variables. Osborne and Waters (2002) suggested using residual plots to detect non-linearity. Tabachnick and Fidell (2007) also mentioned evaluating the linearity assumption through bivariate scatterplots. Both bivariate scatterplots and residual plots were produced, and no curvilinear relationships were detected. There was no evidence that the assumption was not met.

Homoscedasticity. Homoscedasticity was examined through bivariate scatterplots which provided no evidence of violation of this assumption. Further description of bivariate scatterplots was provided in the following bivariate analysis section. Table 4-2 includes means, ranges, standard deviations, skewness (and its standard error), kurtosis (and its standard error), and ranges for dependent and independent variables after logarithmic transformations.

Table 4-2

Descriptive Statistics for Variables After Transformation (N = 92)

Variable	Range	Mean	Std. Deviation	Skewness	Kurtosis
Age When Adopted[a]	1.36	1.20	.22	1.21	2.60
Months with Parents[a]	2.06	1.62	.43	-.656	.33
Institutionalization[a]	.48	.68	.13	.17	-.43
Authoritative Parenting	33	63.13	5.89	-.63	1.22
Authoritarian Parenting[a]	.40	1.25	.08	.33	-.21
Permissive Parenting[a]	.45	.98	.11	.25	-.26
Attachment Security	59	85.21	12.37	-.65	.20
Indiscriminate Friendliness[a]	.78	.30	.22	.05	-.95

Standard Error of Skewness = .25; Standard Error of Kurtosis = .50

Note [a]: Logarithmic Transformation

Bivariate Analysis

Bivariate analysis aims at examining relationships between pairs of variables. Bivariate analysis plays a significant role before multiple regression takes places, because it provides an overview of relationships among variables (Tabachnick & Fidell, 2007). It offers cues on the order of variables to be entered into regression models. Bivariate scatterplots also helps detect multicollinearity (high correlation among two independent variables which would affect the coefficient estimates of individual variables). Correlations in this study were obtained through SPSS correlation analysis for the independent variables (i.e., age when adopted, months spent with parents, institutionalization, and three subscales of parenting styles) and the dependent variables (i.e., attachment security and indiscriminate friendliness). Table 4-3 shows the

correlation matrix for the variables in the study. Pearson's correlation coefficient (r) denotes the

strength and direction of correlations between two variables.

Table 4-3

Correlation Matrix of Variables (N = 92)

Variable	1	2	3	4	5	6	7	8
1. Age When Adopted[a]		-.56[**]	-.10	.00	-.17	-.20	.05	-.10
2. Months with Parents[a]			-.16	.15	.09	-.08	-.08	.22[*]
3. Institutionalization[a]				-.22[*]	.11	.15	-.11	-.24[*]
4. Authoritative Parenting					-.42[**]	-.35[**]	.30[**]	.20
5. Authoritarian Parenting[a]						.44[**]	-.16	-.04
6. Permissive Parenting[a]							-.36[**]	-.14
7. Attachment Security								.12
8. Indiscriminate Friendliness[a]								

Note. [*] = Correlation is significant at the .05 level. [**] = Correlation is significant at the .01 level.

[a]: Logarithmic Transformation

Bivariate scatterplots were yielded to examine homoscedasticity and multicollinearity

(Tabachnick & Fidell, 2007). Bivariate scatterplots of variables in this study showed no

heteroscedasticity or multicollinearity. Tabachnick and Fidell suggested that if the absolute value

of the correlation between two variables is equal to or larger than .90, one of the two variables

should be deleted. None of the correlation values between variables in this study exceeds the

limit. Namely, no multicollinearity issues were found for variables in this study. Correlation

analysis shows correlations between each independent and dependent variables, each pair of

independent variables, as well as the relationship between the two dependent variables.

Correlations Between Independent and Dependent Variables

The results revealed four pairs of significant correlations. With the first dependent variables, authoritative parenting was significantly correlated with attachment security ($r = .30$, $p < .01$) and permissive parenting was negatively associated with attachment security ($r = -.36$, $p < .01$). Two independent variables were significantly correlated with indiscriminate friendliness. Significant corrections were found between months with parents and indiscriminate friendliness ($.22$, $p < .05$), and between institutionalization and indiscriminate friendliness ($-.24$, $p < .05$).

Correlations Among Independent Variables

Several independent variables were found to be significantly correlated with each other. Age when adopted was significantly correlated with months with parents ($r = -.56$, $p < .01$), institutionalization was significantly correlated with authoritative parenting ($r = -.22$, $p < .05$), and the three subscales of parenting styles were significantly correlated with each other. Authoritative parenting had a moderate correlation with authoritarian parenting ($r = -.42$, $p < .01$) and permissive parenting ($r = -.35$, $p < .01$), and authoritarian parenting had a moderate correlation with permissive parenting ($r = .44$, $p < .01$).

Correlation Between Dependent Variables

No significant correlation was found between the two dependent variables (attachment security and indiscriminate friendliness; $r = .12$, $p > .05$). This answered research questions three of this study: *3) Are attachment security and the level of indiscriminate friendliness correlated in the sample of Chinese adoptees in this study?* Children with high level of attachment security did not indicate less indiscriminate friendliness behaviors.

Independent T-Tests and Analysis of Variance (ANOVA)

Independent t-test and ANOVA are two approaches to compare mean differences in dependent variable scores between/among groups of participants. Independent t-test is used to

detect if significant mean difference exists between two independent sample groups, and ANOVA is more often used to examine differences within more than two groups. Independent t-test and ANOVA produced answers for whether or not there is significant difference in dependent variable scores between/among groups of caregiving role, length of institutionalization, numbers of siblings, and participants' education and employment level.

Independent t-tests were run with nominal variables with two categories (e.g., caregiving role; length of institutionalization). Participants reported themselves as either primary caregiver (Group 1) or equal caregiver (i.e., take up similar amount of caregiving work as his/her spouse does; Group 2). Children in the study were institutionalized for either above six months (Group 1) or below six months (Group 2). Mean difference analysis between participants' identities (i.e., mother and father) was not conducted due to the severely imbalance of sample size (only four out the 92 participants reported themselves as the father of the child).

Means of the two dependent variables between primary and equal caregivers were approximately the same. Children with above six months institutionalization scored similarly to these institutionalized below six months in attachment security. Children who were institutionalized for more than six months were shown to present with higher level of indiscriminate friendliness (M = .32) than these institutionalized for less than six months (M = .25). The difference was not significant (p > .01). Table 4-4 illustrates the t-test results in attachment security and indiscriminate friendliness between groups.

Table 4-4

T-Tests of Nominal Variables on Dependent Variables. ($n_1 = 64$, $n_2 = 28$)

	Dependent Variable	t value
Caregiving Role	Attachment Security	-.85
$n_1 = 64$, $n_2 = 28$	Indiscriminate Friendliness	.68
Length of Institution	Attachment Security	.87
$n_1 = 69$, $n_2 = 18$	Indiscriminate Friendliness	1.22

Note: p for all t values > .01

Analysis of variance (ANOVA) was used to compare differences between groups of categorical variables with more than two groups (i.e., number of siblings, employment, education). Number of siblings were categorized into three groups (Group 1 = child has no sibling; Group 2 = child has one sibling; Group 3 = child has more than one sibling). Three groups were assigned to employment (Group 1 = works above or equals to 20 hours per week; Group 2 = works below 20 hours per week; Group 3 = no employment outside of home) and education (Group 1 = received college degree or under; Group 2 = had some graduate education or obtained a Master's degree; Group 3 = received a doctoral degree). Differences in spouse employment and spouse education were not compared due to the imbalance of sample size in each group. Analysis was carried out with each of the two dependent variables. No significant differences were detected between any groups compared (p > .01). Table 4-5 presents the ANOVA results in attachment security and indiscriminate friendliness between groups.

Table 4-5

One-Way ANOVA of Nominal Variables on Dependent Variables.

	Dependent Variable	F value
Number of Siblings	Attachment Security	.73
$n_1 = 30, n_2 = 25, n_3 = 27$	Indiscriminate Friendliness	.22
Employment	Attachment Security	.14
$n_1 = 43, n_2 = 18, n_3 = 31$	Indiscriminate Friendliness	2.10
Education	Attachment Security	.87
$n_1 = 34, n_2 = 51, n_3 = 7$	Indiscriminate Friendliness	.14

Note: p for all t values > .01

Hierarchical Multiple Regression

Hierarchical multiple regression is the main analytic approach used in this study. Hierarchical multiple regression analysis was initiated after univariate and bivariate analyses. It produced output with beta coefficient estimates and significance level of each independent variable in predicting each of the dependent variables. Hierarchical regression models were run through SPSS linear regression analysis with attachment security and indiscriminate friendliness respectively. The same independent variables (age when adopted, months with parents, institutionalization, and the three subscales of parenting styles) were entered into three regression models with each of the two dependent variables (attachment security and indiscriminate friendliness). Interactions between variables were not the focus of the study, but potential moderation effects were examined to get a thorough understanding of relationships between and among the variables.

Research Question One

Are age when adopted, institutionalization experience, time spent with adoptive families, and parenting styles significantly associated with attachment security in Chinese adoptees?

Results showed that only authoritative parenting and permissive parenting are significantly associated with attachment security in Chinese adoptees in this study (authoritative parenting, p = .01; permissive parenting, p = .002). Authoritative parenting was positively associated with the attachment security score in children, whereas permissive parenting was negatively associated with attachment security in the same sample. Hierarchical multiple regression not only produced results that reflected relationships between each of the independent variable and attachment security, but also provided an answer for how much each variable influenced the change of the R-squared value. Variables were entered in different models according to the literature and bivariate analysis results. The two demographic variables (i.e., age when adopted and months with parents) were entered into the first model of the hierarchical regression. Institutionalization was added to the second model. The third model included the three subscales of parenting styles, namely, authoritative parenting, authoritarian parenting, and permissive parenting. Authoritative parenting and permissive parenting were moderately correlated (r = .30 for authoritative parenting; r = -.36 for permissive parenting) with attachment security according to bivariate analysis, so they were placed in a separate model from other two blocks. Table 4-6 presents the standardized beta coefficients and the significance level of each of the predictor variables, R-squared, adjusted R-squared, and F value for ΔR^2.

The first and second models turned out to be nonsignificant (Model 1, p = .77; Model 2, p = .70). The third model was significant (p = .001). The model successfully explained 23% of the total variance in attachment security (R^2 = .23, adjusted R^2 = .17, F(3, 85) = 7.72, p = .001),

which indicated a medium effect size (Cohen, 1988). There is some moderate difference between the R-squared value and adjusted R-squared value. This suggested some shrinkage or non-reliability in the data. Only authoritative parenting and permissive parenting significantly predicted the attachment security in children in this study (authoritative parenting, $p = .01$; permissive parenting, $p = .002$). Authoritative parenting was significantly associated with attachment security (i.e., the higher participants scored in the authoritative parenting category, the better they scored for their children's attachment security; $\beta = .28$, $t = 2.57$, $p = .01$). On the other hand, permissive parenting was negatively associated with attachment security (i.e., the higher participants scored in the permissive parenting category, the lower they scored for their children's attachment security; $\beta = -.36$, $t = -3.17$, $p = .001$).

Negative relationships were reflected between age when adopted and attachment security ($\beta = -.09$, $t = -.75$, $p = .45$), and between months spent with parents and attachment security ($\beta = -.18$, $t = -1.46$, $p = .15$). The relationships were nonsignificant. Institutionalization was positively related to attachment security at a marginally significant level ($\beta = .17$, $t = 1.71$, $p = .09$), which means that positive institutionalization experience (i.e., short institutionalization time and better care quality received in an institution) marginally predicted the attachment security in children.

Table 4-6

Hierarchical Regression Analysis of Predictors of Attachment Security (N = 92)

Model	Independent Variables	B	β	Total R^2	Adjusted R^2	F for change in R^2
1	Age When Adopted	.24	.004	.01	-.02	.26
	Months with Parents	-2.16	-.07			
2	Age When Adopted	1.88	.03			
	Months with Parents	-1.20	-.04	.02	-.02	.88
	Institutionalization	10.23	.10			
3	Age When Adopted	-5.18	-.09			
	Months with Parents	-5.25	-.18			
	Institutionalization	17.14	.17			
	Authoritative Parenting	.60**	.28**	.23**	.17**	7.72**
	Authoritarian Parenting	14.34	.10			
	Permissive Parenting	40.79**	-.36**			

Note: ** = p value below .01

Scatterplot of residuals, normality probability plot, and histogram were produced with the hierarchical regression analysis. The normality probability plot demonstrated a linear relationship between the predictor variables and the attachment security. Regression standardized residuals were randomly distributed along the 0-line of the regression standardized predicted value, which supported the homoscedasticity assumption. The histogram demonstrated an approximately normal distribution of standardized residuals.

Research Question Two

Are age when adopted, institutionalization experience, time spent with adoptive families,

and parenting styles significantly associated with the indiscriminately friendly behavior

presented by Chinese adoptees?

Children's institutionalization experience and time spent with adoptive families were

found to be significantly associated with indiscriminate friendliness presented by children in this

study (p = .04 with both of the variables). Positive institutionalization experience predicted less

indiscriminate friendliness in children. Intriguingly, more time spent with adoptive parents was

not associated with decrease in indiscriminate friendliness Chinese adoptees. Independent

variables: age when adopted, months with parents, institutionalization, and three subscales of

parenting styles were entered into three models of hierarchical multiple regression. Following the

same procedures of research question one, age when adopted and months with parents were

entered into the first model, institutionalization was placed in the second model, and the three

subscales of parenting styles were entered into the third model. Table 4-7 presents the

standardized beta coefficients and the significance level of each of the predictor variables, R-

squared value, adjusted R-squared value, and F value for ΔR^2.

The second model with adding institutionalization was significant (p = .04), and the first

and third models were not (p = .11 and .10). The total variance in indiscriminate friendliness

explained by the significant model was 9% (R^2 = .09, adjusted R^2 = .06, F (1, 88) = 4.16, p = .04),

which indicated a moderate effect size (i.e., total variance explained ranges from 9% to 25%;

Cohen, 1988). There is a moderate drop from R-squared value to adjusted R-squared value,

which suggested some shrinkage or non-reliability in the data. Similar to the results in bivariate

analysis, institutionalization and months with parents were the only two significant predictors of

indiscriminate friendliness. Months with parents was positively associated with indiscriminate

friendliness at a significance level (β = .24, t = 1.92, p = .04). There was a negative association

between institutionalization and indiscriminate friendliness (β = -.22, t = -2.04, p = .04), namely,

positive institutionalization experience that the child had prior to adoption predicted less

indiscriminate friendliness behaviors in children. Positive standardized beta coefficients with

authoritative parenting and authoritarian parenting were reported, and negative beta coefficient

value was presented with permissive parenting. The associations between parenting styles and

indiscriminate friendliness were nonsignificant (authoritative parenting, p = .27; authoritarian

parenting, p = .65; permissive parenting, p = .48).

Table 4-7

Hierarchical Regression Analysis of Predictors of Indiscriminate Friendliness (N = 92)

Model	Independent Variables	B	β	Total R^2	Adjusted R^2	F for change in R^2
1	Age When Adopted	.04	.04	.05	.03	2.27
	Months with Parents	.13*	.24*			
2	Age When Adopted	-.02	-.02			
	Months with Parents	.09	.17	.09*	.06*	4.16*
	Institutionalization	-.38*	-.22*			
3	Age When Adopted	-.05	-.05			
	Months with Parents	.07	.13			
	Institutionalization	-.34	-.19			
	Authoritative Parenting	.01	.13	.11	.05	.72
	Authoritarian Parenting	.15	.06			
	Permissive Parenting	-.18	-.09			

Note: [*] = p value was below .05

Scatterplot of residuals, normality probability plot, and histogram supported the assumptions of multiple regression analysis. The residual scatterplot was centered slightly above the 0-line, but did not show obvious violation of normality and homoscedasticity. Observed probabilities mostly followed a straight line which supported the linear assumption. The histogram presented a normal distribution of standardized residuals.

Testing Moderation Effects

Testing moderation effects of independent variables was not the research focus of this study. Relationships between interaction variables and dependent variables along with significance levels were investigated to gain a better understanding of relationships among variables, and potential moderation effects. Interaction variables were added into the hierarchical regression analysis, as the fourth model, to check potential moderation effects of particular variables.

Age when adopted x institutionalization (Interaction 1), months with parents x institutionalization (Interaction 2), months with parents x authoritative parenting (Interaction 3), and institutionalization x authoritative parenting (Interaction 4) were entered into multiple regression using attachment security as the dependent variable. The interaction terms were entered as a separate model (Model 4). The R-square value was increased to .27, and the adjusted R-square value was .18, however, the model was nonsignificant ($p > .01$). None of the interaction terms were found to be significant in predicting the attachment security score, which means that no significant moderation effects existed. Table 4-8 includes the standardized beta coefficients and the significance level of each of the predictor variables, R-squared value, adjusted R-square value, and F value for ΔR^2 of the four interaction terms.

Table 4-8

Testing Moderation of Predictors of Attachment Security (N = 92)

Model	Interaction Variables	B	β	Total R^2	Adjusted R^2	F for change in R^2
4	Interaction 1	102.92	1.65			
	Interaction 2	.43	1.05	.27	.18	1.07
	Interaction 3	47.69	1.26			
	Interaction 4	-2.24	-1.48			

Note: p values for the results above were all > .01; Interaction 1 = Age when adopted x institutionalization; Interaction 2 = Months with parents x institutionalization; Interaction 3 = months with parents x authoritative parenting; Interaction 4 = institutionalization x authoritative parenting

The same interaction terms were also tested with indiscriminate friendliness following the same procedures. The model with interaction terms was nonsignificant (p > .01), although the variance in the dependent variable explained by the regression model was improved to .15. All the four interaction terms were proved to be nonsignificant predictors. Table 4-9 presents the standardized beta coefficients and the significance level of each of the predictor variables, R-squared value, adjusted R-squared value, and F value for ΔR^2 of the four interaction terms.

Table 4-9

Testing Moderation of Predictors of Indiscriminate Friendliness (N = 92)

Model	Interaction Variables	B	β	Total R^2	Adjusted R^2	F for change in R^2
4	Interaction 1	-1.10	-.98			
	Interaction 2	-.001	-.17	.15	.05	1.86
	Interaction 3	-.20	-.29			
	Interaction 4	-.05	-1.67			

Note: p values for the results above were all > .01; Interaction 1 = Age when adopted x

institutionalization; Interaction 2 = Months with parents x institutionalization; Interaction 3

= months with parents x authoritative parenting; Interaction 4 = institutionalization x

authoritative parenting

CHAPTER 5

DISCUSSION

The main purpose of the study is to investigate variables that may be associated with attachment security and indiscriminate friendliness in Chinese children adopted by U.S. parents. The study is also designed to examine the relationship between the two dependent variables attachment security and indiscriminate friendliness. Results yielded by this study showed that parenting styles (particularly authoritative parenting and permissive parenting) are significant predictors of attachment security, while institutionalization experience and time spent with parents were two significant variables associated with indiscriminate friendliness. No significant relationship was found between attachment security and indiscriminate friendliness. The chapter provides further elaborations on findings of the study with explanations for both significant and nonsignificant results followed by practical implications, limitations of this study, and recommendations for future research.

Discussion of Findings

The role of age when adopted, time spent with adoptive parents, institutionalization experience, and parenting styles in predicting attachment security and indiscriminate friendliness were investigated based on existing literature and attachment theory. Three research questions were proposed: 1) Are age when adopted, institutionalization experiences, time spent with adoptive families, and parenting styles significantly associated with attachment security in Chinese adoptees? 2) Are age when adopted, institutionalization experiences, time spent with adoptive families, and parenting styles significantly associated with the indiscriminately friendly behavior presented by Chinese adoptees? 3) Are attachment security and the level of indiscriminate friendliness correlated in the sample of Chinese adoptees in this study?

Hypotheses for the three questions were:

1) Chinese adoptees adopted at an early age, with more positive institutionalization experience, more time spent with adoptive families, and who have received more authoritative parenting present with more secure attachment.

2) Chinese adoptees adopted at an early age, with more positive institutionalization experience, more time spent with adoptive families, and who have received more authoritative parenting present with less indiscriminate friendliness.

3) Attachment security is negatively associated with the level of indiscriminate friendliness showed in children in this study (i.e., children presented with more secure attachment would show less indiscriminate friendliness).

Participants of the study were mostly mothers with children adopted from China. Participants were white U.S. citizens and were either the primary or equal caregivers of their adopted children. Children involved in the study were mostly adopted under 24 months old and are currently under 72 months. Twenty-nine participants with children who were beyond the age range were also included in the study due to nonsignificant differences that they scored in dependent variables compared with those within the age range.

Multiple hierarchical regression analysis and bivariate analysis produced answers for the three questions. Age wen adopted, time (months) spent with parents, institutionalization experience, and parenting styles (i.e., authoritative parenting, authoritarian parenting, and permissive parenting) were treated as the independent variables, and attachment security and indiscriminate friendliness were treated as the dependent variables. Results partially supported the hypotheses of the study. Further discussions were provided under each part of research analysis.

Predictors of Attachment Security

Findings of the study did not fully support the first hypothesis: *1) Chinese adoptees adopted at an early age, with more positive institutionalization experience, more time spent with adoptive families, and who have received more authoritative parenting present with more secure attachment.* Only authoritative parenting and permissive parenting were significant predictors of attachment security in children in this study. Authoritative parenting was found to be positively associated with attachment security, and permissive parenting was negatively associated with attachment security in children.

Authoritative parenting. The significant relationship between authoritative parenting and attachment security was supported by previous studies (Beijersbergen et al., 2012; Kaufmann et al., 2000; Stams et al., 2002, Tan et al., 2012). One of the core components of authoritative parenting is parents' responsiveness to children's needs (Baumrind, 1978). Maternal responsiveness (or responsiveness from the primary caregiver to a child) referred to the parent's ability to respond to critical cues sent by an infant in an immediate and consistent manner (Karl, 1995). While maternal responsiveness was more frequently used to study infant-caregiver relationship, parenting styles are used more often in relationship pattern between young children/adolescents and parents, both of which were guided by the same principle (Liu & Hazler, 2015).

The empirical study of Ainsworth (1979b) showed that appropriate responsiveness provided by mothers was positively associated with Group B infants (i.e., the securely attached group of infants). Parents' consistent responsiveness to children in the caregiving process predicted continuity of secure attachment in adoptees according to a longitudinal study of

Beijersbergen et al. (2012) on a group of international adoptees to Netherlands. The meta-analysis of Stams and colleagues (2002) supported that parents' responsiveness to children after adoption contributed tremendously to adoptees' overall post-adoption adjustment. A positive correlation was noted between authoritative parenting and children's overall competence, whereas authoritarian and permissive parenting were more related to children's behavioral and developmental issues (Kaufmann et al., 2000). The findings were also supported by Tan et al. (2012) that authoritative parenting was significantly related to less behavioral problems in children adopted from China.

Permissive parenting. Findings of the current study demonstrated a negative relationship between permissive parenting and attachment security in children, which means the higher level of permissive parenting that a parent provided the lower the participant scored for the child's attachment security. Current literature provides evidence to support the relationship between permissive parenting and children's post-adoption adjustment and behavioral problems. Permissive parenting refers to parents' showing moderate level of responsiveness but failing to set up appropriate expectations for children (Baumrind, 1978). The definition of permissive parenting indicates two deficits: a) parents do not show proper responsiveness to the child's needs; and b) there is a lack of demandingness in nurturing the child.

No research was found specifically on the relationship between permissive parenting and attachment in children adopted from China or IA children in general, but previous findings provided evidences for significant relationships between permissive parenting and adoptees' adjustment outcomes and behavioral problems presented. In studying the relationships among parenting styles, family stress, and Chinese adoptees' behavioral adjustment, Tan et al. (2012) found that authoritarian and permissive parenting styles (measured by PSDQ) were positively

correlated with the amount of behavioral problems (measured by Child Behavior Checklist; CBCL) presented by children. DeVito and Hopkins (2001) used hierarchical regression analysis to investigate predictors of disruptive behaviors in preschoolers which yielded a positively relationship between permissive parenting and disruptive behaviors in the children in the study ($\beta = .24$, $p < .05$).

Nonsignificant variables. Age when adopted, time spent with parents, institutionalization, and authoritarian parenting were found to be nonsignificant predictors of attachment security in children in the current study. The results were different from some findings reported in current literature. Bowlby (1973) maintained that the first few years were critical for children to develop expectations of caregivers' responsiveness and establish effective internal working model which is a core element of child-parent attachment, so children adopted at an younger age were supposed to develop better attachment security with their parents. Different from Bowlby's concept, Children's age when adopted was shown as a nonsignificant predictor in the current study.

Possible explanation of the nonsignificant result for age when adopted is that the variable was severely positively skewed, which means that a majority of children involved in the currently study were adopted at an early age ($M = 18.8$ months) and were still in the critical stage for attachment developments. The selection criterion that children were adopted before two years old may not allow significant age difference.

Previous studies (e.g., Bakermans-Kranenburg et al., 2005; Smyke et al., 2010; Stams et al., 2002) indicated age as a significant predictor of adoptees' adjustment outcomes, but they all focused on the international adopted children in general, the results thus may not be applied to Chinese adoptees due to the characteristics distinct them from other children. Two studies

(Cohen & Farnia, 2011; Tan et al., 2010) on Chinese adoptees echoed results of the current study that age when adopted did not significantly predict adjustment outcomes. Behaviors at the time of adoption rather than children's age significantly predicted their externalizing and internalizing behavioral problems (Tan et al., 2010). Cohen and Farnia (2011) also noted that Chinese adoptees' social-emotional development was not significantly predicted by children's age when adopted.

Time spent with parents was selected as an independent variable of the hierarchical regression analysis, as former research (Pugliese et al., 2010) found that Chinese adoptees started to form secure attachment with their adoptive mothers after six months of adoption evidenced by the increase of secure attachment behaviors and a decrease in insecure and disorganized attachment behaviors. The length of time that adoptees spent with adoptive parents theoretically allowed them to recover from previous adverse experiences (Jufer & van IJzendoorn, 2005; van den Dries et al., 2008). The longitudinal study of Pugliese et al. (2010) only included changes in adoptees' attachment scores during the first six months after adoption. As the mean age of children in their study was 13.5 months, the next six months was the critical period for children to develop secure attachment with caregivers based on attachment theory. Different patterns may have appeared during the next one to two years follow-up of the children. According to attachment theory (Bowlby, 1973), the first few years are the critical period for attachment to be developed, and attachment patterns may stay relatively stable throughout rest of the child's life. This adds more sense to the findings of the current study, as the mean value of time spent with adoptive parents in the current study is 61 months (i.e., adoptees have spent an average of five years with their parents), of which attachment patterns were formed during the first one or two years and were maintained during the rest time.

Institutionalization experience was a nonsignificant predictor of attachment security. Part of the non-significance may be due to the measuring scale and its reliability concern. No existing instrument was found measuring institutionalization experience that children had prior to adoption. Measuring the physical environment of institutions of children in the current study did not seem to be realistic due to the physical distance between China and the U.S. and the time elapse since the children were adopted. Self-constructed items were used to measure children's institutionalization experience in this study (by adding together items measuring children's length of institutionalization, their weight range when adopted, and participants' perception of institutional care quality that their children received). The items yielded low internal reliability (Cronbach's alpha < .50), which means that the items may not measure the same construct within the scale. A separate item was created in addition to the items measuring institutional experience to assess parents' knowledge about children's pre-adoption institutional care quality. The descriptive statistic showed that 18.5% of participants knew nothing about the institutional care quality that their children received prior to adoption, 31.5% reported that they know very little about it, and about 33.7% revealed that they knew some about it. Only 15.2% of participants shared that they know pretty much about their children's institutionalization experience, and only one participant reported to be very knowledgeable about the child's institutional care before adoption. The descriptive data provided further evidence that participants' perception of institutionalization experience that their children had may not be accurate thus add to the non-significant results.

Qualitative information shared by one parent revealed some importance of pre-adoption experience although institutionalization experience was shown as nonsignificant in this study. The parent reported that the institution where the child was adopted from started to instill

"family" concept to the child by showing photo albums and other symbolic objects of the adoptive family, so the child learned where s/he would be placed before the official adoption happened. The parent reported that the children quickly recognized the family when first met and was able to establish secure attachment within a very short amount of time.

Authoritarian parenting was another nonsignificant predictor of attachment security in the current study. It refers to parents' showing high level of demandingness without providing responsiveness and support needed by the child (Baumrind, 1978). It was found to be correlated with more behavioral and developmental problems that children exhibited after adoption (Kaufman et al., 2000; Tan et al., 2012). No direct relationships were reported between authoritarian parenting and attachment security in children in current literature.

Predictors of Indiscriminate Friendliness

Findings of the study partially supported the second hypothesis: *2) Chinese adoptees adopted at an early age, with more positive institutionalization experience, more time spent with adoptive families, and who have received more authoritative parenting present with less indiscriminate friendliness.* Children's institutionalization experience and time spent with parents were found to be the only two significant predictors of the indiscriminate friendliness level. Children's institutionalization experience prior to adoption was negatively associated with the amount of indiscriminately friendly behaviors in children, which indicates that positive institutionalization experience that the child had before adoption predicted less indiscriminate friendliness presented by children in the current study. Time spent with parents was positively associated with children's indiscriminate friendliness at a marginally significant level (p = .05), implying that an increase in the amount of time a child spent with adoptive parents was not accompanied by decrease in indiscriminate friendliness in the child.

Institutionalization experiences. The significance of institutionalization experience to predict the level of indiscriminate friendliness in adoptees has been supported by previous findings. A comparison between a group of children adopted from Chinese orphanages/foster care and a group of non-adopted children showed that children who were institutionalized or foster cared presented with more indiscriminate friendliness than the non-adopted group at the same age range (van den Dries et al., 2012). Similar results were reported in research on Romanian adoptees (Chisholm 1998; Chisholm et al., 1995) which compared the indiscriminate friendliness presented by three groups of children (RO Group - adoptees who had spent more than eight months in Romanian institutions; CB Group – non-adopted Canadian-born children; and EA Group - children adopted from Romania before four months old). Results showed that children from the RO Group exhibited significantly more indiscriminate friendliness than children from the other two groups, which supported that the lengths of institutionalization was associated with the indiscriminate friendliness in children.

Time spent with parents. The length of time that children spent with adoptive families was not accompanied by a decrease in children's indiscriminate friendliness at a marginal significance value (p = .05). The result was inconsistent with one previous study (Pugliese et al., 2010) where indiscriminate friendliness was categorized as a form of disorganized attachment. Chinese adoptees in the study showed a significant decrease in disorganized attachment behaviors six months since adoption. The inconsistency may be due to the difference in lengths of time that children have spent with parents, as Pugliese et al. (2010)'s emphasis was only on the first six months after adoption. The standard of evaluating the level of friendliness may also differ among participants.

Nonsignificant variables. Nonsignificant predictors include age when adopted and all three subscales of parenting styles. The study was proposed to investigate into new relationships and examine the significance of the children's age and parenting styles in predicting indiscriminately friendly behaviors in Chinese adoptees, as the two variables were not studied in previous research. In spite of the nonsignificant results, the current study offered important insights that indiscriminate may be more associated with other variables related to children's pre-adoption experience and socioemotional status other than age and post-adoption conditions, which was supported by current literature.

Children's pre-adoption institutionalization experience appeared to be a common significant predictor of the indiscriminate friendliness level in Romanian institutionalized adoptees (Chisholm, 1998; Chisholm et al., 1995), IA children in the U.S. (Bruce et al., 2009), and Chinese adoptees in Netherlands (van den Dries et al., 2012). Within the group of institutionalized children, the ones who received more sensitive care from adoptive parents showed less indiscriminate friendliness than those who did not (van den Dries et al., 2012). Sensitive care by adoptive parents significantly differs from parenting styles in the study, as it mainly focuses on attending to children's physical needs.

The relationship between socioemotional status and indiscriminate friendliness was supported by Pears et al. (2011). Pears and colleagues focused on indiscriminate friendliness in maltreated foster children and found that children's deficits in inhibitory control (i.e., inability to control and regulate impulsive attention or behavioral response) was a significant predictor of children's indiscriminate friendliness. A significant difference in indiscriminate friendliness scores was found between a group a children adopted from Romanian institutions after eight months old and another group with children adopted before four months old, indicating that

children who were adopted younger presented with less indiscriminately friendly behaviors, with which the significance might be due to children's age when adopted, time spent with adoptive parents, or special care received from parents (Chisholm 1998).

Correlations Between Attachment Security and Indiscriminate Friendliness

Results of bivariate analysis did not support the third hypothesis: *3) Attachment security is negatively associated with the level of indiscriminate friendliness showed in children in this study (i.e., children presented with more secure attachment would show less indiscriminate friendliness)*. Attachment security was not correlated with indiscriminate friendliness in Chinese adoptees in this study. Children presented with more secure attachment were not accompanied by lower scores in indiscriminate friendliness. Findings in current literature provided evidence to support the nonsignificant correlation between attachment and indiscriminate friendliness.

Previous research (Bruce et al., 2009; Chisholm 1998; Chisholm et al., 1995; Zeanah et al., 2002) also showed a nonsignificant relationship between attachment security and indiscriminate friendliness in IA children. The studies mainly focused on children from Romanian institutions or IA children in general, so the current study aimed at examining the relationship between the two variables in Chinese adoptees and to detect if different patterns exist due to their positive adjustment outcomes.

Results in the current study were consistent with previous findings on the relationship between attachment and indiscriminate friendliness. Indiscriminate friendliness was not correlated with the level of attachment security in children adopted from Romanian institutions soon after adoption, as they did not show a decrease in indiscriminate friendliness while their secure attachment behaviors increase two years after adoption (Chisholm, 1998; Chisholm et al., 1995). It was more associated with children's socioemotional abilities versus attachment

behaviors (O'Connor et al., 1999). Following the research of Bruce et al. (2009), Pears and colleagues (2011) reported similar findings that indiscriminate friendliness was not significantly correlated with attachment related behaviors, instead, indiscriminate friendliness was correlated with inhibitory control of children.

Independent T-Test and Analysis of Variance (ANOVA)

Results of independent t-test and ANOVA on categorical variables were nonsignificant. It was not realistic to compare children's attachment security with mothers and fathers due to sample size imbalance. It was hypothesized in attachment theory that the role of maternal love facilitates infants' attachment formation, whereas current literature shifted focus to primary caregiver (whoever providing primary care to the child). No significant difference was found in attachment security and indiscriminate friendliness scores that primary caregivers and equal caregivers scored for their children in the current study. No participants reported themselves as the secondary caregivers of their children, so no comparison can be made between primary or equal caregivers and secondary caregivers. It was proposed that children are able to discriminate attachment figures from others based on their frequent interactions and reciprocal behaviors with the attachment figure (Sroufe & Waters, 1977). No significant difference in dependent variables scores between primary and equal caregivers may be because children received similar/equal amount of interactions and reciprocal behaviors with both parents (i.e., equal caregivers), thus demonstrated similar level of attachment security with each of them. ANOVA results did not show significance of parents' level of education and weekly time of employment on attachment security and indiscriminate friendliness. No evidence was shown in current literature about whether parents' education or employment play significant roles. Most participants of this study received college degree or above thus may not allow enough diversity to compare the difference.

Reflection of Theoretical Framework

      Attachment theory. Attachment theory was used as the main theoretical framework of the current study. Instead of absolutely falling into the theory or going against it, results of the study provided evidences supporting the theory as well as new directions which were not included in it. The significance of authoritative parenting and permissive parenting in predicting attachment security in adoptees supported the interplay of parental care and attachment formation. A child was able to develop more secure attachment if the caregiver consistently acknowledges the child's needs, vice versa, the child forms an insecure attachment with an unworthy self if experiencing insufficient responsiveness from the caregiver (Bretherton, 1996). The current study did not compare attachment security scores that mothers and fathers scored in relation to children's attachment relationship with themselves due to the sample size discrepancy. Results provided clues that adoptees formed positive attachment with mothers. The lack of significance for time spent with parents as a predictor of attachment security in adoptees also provided evidence to support the theory. Hierarchical regression analysis results showed that children who had spent more time with their parents did not show higher attachment security scores. Children develop their internal working models based on their interactions with their caregivers in the first few years, which would stay relatively stable throughout the rest of their lives according to the theory (Bowlby, 1973).

      Results of the current study shed light on new directions for expansion of the theory. A salient point of attachment theory is that the impact of a child's separation from his/her mother at an early age (particularly the first one or two years) can be permanent, that the child has a high risk of suffering from attachment disorders/insecurities (Bowlby, 1951 & 1953). Steady and consistent maternal care was proposed to be an irreplaceable element of a child's later

development according to the theory. Results of the current study revealed that adoptees generally developed secure attachment with adoptive parents despite of the adoption process. Attachment security scores ($M = 85.2$) were not significantly different from other populations measured by the same measurement. Chisholm et al. (1995) matched two groups of Canadian-born non-adopted children with two groups of Romanian institutionalized adoptees (one group with children adopted before four months old, and the other above either months old) and reported mean scores of the two Canadian-born non-adopted groups as 87.2 and 85.8. Bartel (1998) reported a mean item score of attachment security of children in the study as 3.7 (multiplying 23 items equals to 85.1 total attachment security score). The findings of the current study indicated that children seemed to develop secure attachment overall with their caregivers after adoption, which went beyond the concept of attachment theory and suggested that significant post-adoption variables (e.g., appropriate parenting) may buffer children's pre-adoption adversities and compensate the inconsistent maternal care that children had experienced during the adoption process.

The theory also highlights the role of mother (or the primary caregiver in general in later research around the theory) in facilitating a child's attachment development. The child's ability to discriminate mother (or primary caregiver) from other adult figures was viewed as one of the core components of attachment theory (Sroufe & Waters, 1977). Independent t-test analysis did not yield significant difference in children's attachment security scores between primary caregivers and equal caregivers, which means that primary caregiver participants did not report better attachment security than those equal caregiver participants, with regard to attachment securities in children.

Parenting styles. Parenting styles (Baumrind, 1978) was another complementary framework used in the current study. Results of the study supported the main concepts of Baumrind's models. Three primary parenting styles (i.e., authoritative, authoritarian, and permissive) were highlighted in the framework and were measured as three subscales of PSDQ (Robinson et al., 2001) in the study. Baumrind emphasized the significance of authoritative parenting in nurturing children's growths and development. The core characteristics of high responsiveness and reasonably high expectations distinct authoritative parenting from the other two parenting approaches, facilitating children's attachment formation with cues sent to caregivers and responses to caregivers' responsiveness (Bowlby, 1973; Ainsworth, 1979a). Hierarchical regression analysis of the current study produced significant results that authoritative parenting predicted higher attachment security scores, and permissive parenting, on the other hand, predicted lower attachment security results. The results reinforced the role of appropriate amount of responsiveness and sensitive care and echoed main concepts of the theory.

Practical Implications

The current study brought attention to attachment security and indiscriminate friendliness in Chinese children adopted by U.S. parents. The population constituted a large number of international adoptions (i.e., accounting for one fourth of the total U.S. international adoptions during the past two decades). Different patterns of results were detected with attachment and indiscriminate friendliness. Chinese adoptees in this study developed attachment security with relationship to caregivers. Authoritative parenting and permissive parenting were shown as two significant predictors of attachment security scores in children, and institutionalization and time with adoptive parents were found to be significantly associated with indiscriminate friendliness. Results of the study provide insights for parents, professional counselors, and mental health

professionals working with adoptive families (or potential international adoptive families) with children adopted from China.

Enhancing Attachment Security

Attachment security was used to describe the attachment quality between a child and his/her caregivers. Attachment, different from bonding, refers to the child utilizing the caregiver as a secure base involving seeking protection from the caregiver and exploring surroundings at the same time (Sroufe & Waters, 1977). Attachment plays a significant in children's later development. Behavioral and developmental issues were exhibited in children who suffered separation from maternal care (Bowlby, 1951 & 1953). Parents and professional counselors are encouraged to work on enhancing children's attachment security due to previous loss and separation adoptees have experienced. Results from the study presented particular significance of appropriate parenting styles. Professional counselors working with adoptees and families may consider highlighting authoritative parenting while working with parents and adoptive families (Liu & Hazler, 2015).

Cultivating appropriate parenting styles. Authoritative parenting, as a significant predictor of the level of attachment security, can be a key area for parents and counselor to work on. Permissive parenting was negative associated with children's attachment scores in this study. Two important aspects of parenting should be emphasized (Baumrind, 1978): 1) Its two core components: responsiveness and demandingness; and 2) the appropriate balance of both components, as overuse of one component may result in a switch from one parenting approach to another. For example, parents' decreasing demandingness/expectation level for children may unconsciously form the permissive approach.

Psychoeducation programs may be designed by counselors to provide a systematic understanding of parenting styles (Hoshmand et al., 2006; Liu & Hazler, 2015). Parenting models from Baumrind's work can be used as a conceptual foundation of the program. Research findings such as findings from this study can be used to provide evidence on how parenting styles may influence children's attachment development. Examples and demonstrations of different parenting styles can be provided, so that parents may gain a concrete understanding of the concepts and apply the information to real life issues.

As a need to cultivate authoritative parenting, parents are encouraged to promote supportive role with consistent instead of harsh discipline (Karl, 1995; Liu & Hazler, 2015). In cultivating authoritative parenting, multicultural sensitivity also needs to be emphasized, as the extent of responsiveness or supportiveness and demandingness that a child needs may vary according to different developmental stages, and the forms of authoritative parenting may not be the same under different cultural contexts (Kisilevsky et al., 1998). For examples, children adopted at an older age and who had received parenting in their countries of origin may present with different patterns from those who were adopted at a younger age and had not gained persistent parenting. Parents are thus encouraged to provide age sensitive authoritative parenting, taking into consideration of children's individual needs (Liu & Hazler, 2015).

Role of age and time. Results of the current study showed that neither age when adopted nor time spent with parents was a significant predictor of children's attachment security scores. These results were contrary to the results found in the literature. Findings in the literature showed that Children's age when adopted was a significant predictor of later adjustment of children, specifically, children who were adopted at a younger age generally showed better post-adoption adjustments. The lack of significance for role of age and time could be because children in the

current study were generally adopted at younger ages. This study, on the other hand, brought it to light the significance of post-adoption reinforcement such as appropriate parenting styles which may play a more important role in fostering secure attachment in children compared to children's age at adoption. Likewise, time that a child spent with adoptive parents was noted as a nonsignificant variable in this study. Both age and time are natural variables (i.e., which can not be controlled and changed), parents and counselors may consider invest more efforts to provide appropriate parenting to respond to attachment patterns presented by children.

Preventing Indiscriminate Friendliness

Results of the study revealed different patterns in relationships between independent variables and indiscriminate friendliness. Insights were drawn from both significant and non-significant relationships and can be used to guide the practices of parents and counselors. The role of institutionalization experience suggested the importance of pre-adoption intervention. The insignificance of age when adopted and parenting styles indicated that children's indiscriminately friendly behaviors may be more associated their experience prior to adoption and have less to do with what they have gained afterwards.

The length of institutionalization time, children's weight at time of adoption, and institutional care (according to parents' perception) were three criteria to assess children's institutionalization experience in this study. Children's weight may be closely related to nutrition they had received in institutions (Welsh & Viana, 2012). Institutional care consists of multiple aspects such as food quality, staff's physical attending skills, as well as mental and psychological care provided in response to children's needs. Significance of institutionalization experience implied that necessary pre-adoption interventions may be conducive for adoptees' post-adoption

development. Improvements were made in overall Chinese orphanages conditions according to adoptees self-reports upon their returning trips back to China.

There is still space that counselors can work with parents and adoption agencies to facilitate pre-adoption prevention programs (e.g., may design and implement training programs specializing in sensitive care; collaborating with medical professionals/social workers in providing sufficient nutrition in children's diet). The psychological aspect can also be reinforced. An example of this is that staff members in a Chinese private institutionalization were assigned different family roles (as father, mother, or siblings), which was speculated to be helpful in creating quasi-family environment while delivering enough attention to each child (Neimetz, 2010).

Misperceptions of Relationship Between Indiscriminate Friendliness and Attachment

No significant correlation was detected between attachment security and indiscriminate friendliness in this study. This was partially supported by current literature with findings that the two variables fell into two independent domains, and children with secure attachment may still potentially exhibit with high level of indiscriminate friendliness (Chisholm, 1998; van den Dries et al., 2012). However, misperceptions are still held by parents and professionals that the two constructs are closely related to each other, and indiscriminate friendliness was viewed as a form of insecure or disorganized attachment (APA, 1994; O'Connor et al., 1999).

Implications were drawn from results of this study: 1) for parents, special attention may be given to track/record children's indiscriminately friendly behaviors to unfamiliar adults despite they have formed secure attachment relationship with parents; 2) for professional counselors, cautions may be given in regard to diagnose children's behaviors (i.e., be aware of the major differences between indiscriminate friendliness and reactive attachment disorder) and

different prevention/intervention strategies should be designed/implemented according to specific behaviors presented by children; and 3) for both parents and professionals counselors, other factors (children's cultural background prior to adoption; children's personalities) may be taken into consideration when examining children's indiscriminately friendly behaviors.

Limitations

Several limitations were recognized in this study. Sample size, internal reliability of particular measurements, the deficits of self-reported surveys, and recruitment methods were discussed in this section.

Sample Size

The ideal sample size was closed to the goal number but not fully fulfilled in this study. G*Power calculation yielded an ideal sample size of 107 participants to reach .95 power. The study ended up with 92 participants, slightly less than the ideal number. The slight difference may not strongly impact the power of the study, but vigilance needs to be given to the effect of a small sample size such as Type II errors, which can yield misleading results (Kelly & Maxwell, 2003). Additionally thirty-nine parents contacted (through email and social media) with valuable qualitative information pertinent to the topic of the study. Parents shared information related to the difficulty in recruiting participants with children within the selection criteria (adopted under 24 months and currently under six years old) due to the changes added to the single child policy and criteria of international adoption in China in recent years.

Measure Limitation

Concerns were held with two scales used in this study. The five-item indiscriminate friendliness scale that has been used most frequently in literature was chosen to measure indiscriminate friendliness in this study. The items yielded low internal reliability with a

Cronbach's alpha value of .58 (with using only the first three items). Although similar values were reported in previous studies (.58-.72 in Chisholm, 1998; .65 with the first three items in Pears et al., 2011), low internal reliability indicated that items of the scale may assess different constructs and lead to inaccuracy of the results of the study. The instrument contains only five items which may not be sufficient in measuring such a complex construct. With the five existing items, several parents reported difficulty in pinpointing answers for particular items as their children behaved differently in different situations and could also be affected by their mood.

Another scale of concerns was the self-constructed items to measure the institutionalization experience. Three items were created to measure the variable, as no existing instrument was found. The items yielded low internal reliability with Cronbach's alpha less than .50.

Self-reported Surveys

Surveys of this study were all self-reported. Mono-method bias might be potentially introduced. Lack of method variance is likely to inflate the relationship among variables as they were measured only by self-reports. Social desirability of self-reported surveys is another concern. Participants might have responded to the items based on what they believed is socially desirable. The Brief Social Desirability Scale (BSDS; Haghighat, 2007) was used to detect participants' tendency to provide socially acceptable responses, yet was dropped due to its low reliability coefficient in this study.

Recruitment Methods

A variety of recruitment approaches were used to in the data collection process. Personal network, adoption agencies, local chapter coordinators, and social media administrators were contacted to recruit participants. The variety of recruitment methods ensured the participants to

be geographically and demographically diverse, however, also made it impossible to count the response rate. Unknown responsive rate or nonresponse error might render survey estimates biased (Johnson & Owens, 2003).

Future Research Recommendations

This study was one of the very few studies investigating attachment security in IA children, particularly children adopted from China. Results yielded from the study laid a foundation for future research. This study investigated attachment patterns in young children and focused merely on Chinese adoptees. Insights were gained pertaining research design, measures, and research directions for future studies.

With contact information shared by participants (email or social media information), a follow-up longitudinal study seemed to be a valuable next step for future research given that the current study only demonstrated attachment/behavioral patterns of young adoptees. Longitudinal data would potentially provide a larger picture of children's attachment development. Qualitative research appears to be desirable, given that attachment has not been thoroughly studied with Chinese adopted children. Most existing studies focused on adoptees' adjustment or attachment outcomes versus the process of attachment formation and development. Several parents already showed willingness to talk more in depth about their personal experience regarding child-parent attachment. Analysis of variance (ANOVA) is another design that can shed light on differences in various aspects of adoptees' development (e.g., academic achievement; behavioral adjustment; racial identity; socioemotional development) with different attachment styles presented by adoptees.

Considering the instrument reliability limitation of the current study, more attention needs to be directed to the choice or design of measuring scales in future research. Due to the

low reliability of the five-item indiscriminate friendliness scale, a new scale can be created (or expansion of the current five-items scale) based on description of the construct. Items may be based on parents' understanding of children's indiscriminate friendliness, the criteria to determine the term "indiscriminate", with consideration of cultural and personality factors. As children's institutionalization was shown to be a significant variable in the study and some previous findings, efforts should be made to further look for valid and reliable instruments or incorporate more items that provide valid measuring of the construct. The current study relied heavily on participants' subjective perception of children's experience in institutions. Efforts can be invested into establishing collaborations with adoption agencies and institutions in countries of origin, so as to obtain more objective information from multiple resources.

Results offered insights for future research regarding variables related to attachment. It was difficult to investigate into all potential predictors of children's attachment security due to the time constraints of this study. The R-squared value indicated a medium effect size (independent variables in the study only explained 23% of the variance in attachment security). Other variables thus can be examined in future research. Two significant variables discussed in literature review but not investigated in this study are children's behaviors at the time of adoption (Tan & Marfo, 2006; Tan et al., 2010) and family stress (Grant et al, 2004; Tan et al., 2012). The variables can to be included in future research examining predictors of attachment. Future research may also incorporate racial/cultural related variables as they distinct international adoptees from domestically adopted children. For example, parents' cultural competence or cultural socialization with people from a child's original culture may influence the child's attachment formation and development.

Because the study focused on young Chinese adoptees, variables in future research may be investigated with a wider population (e.g., Asian adoptees, international adoptees) and older age range. Qualitative information shared by parents supported the need of extended research, as children showed very different attachment patterns when reaching adolescence. It is also recommended that future research to involve children's input in studying attachment. Parents and children are likely to have different perception of a relationship.

Qualitative information shared by parents revealed that there is a decrease in the number of children adopted from China since 2005 (especially children under two years old). The decrease was closely related to the strengthening of international law by Chinese government in 2008 (strict requirements were made in relation to family income, parents' age, sexual orientation, and health conditions) and the flexibility added to the One-Child Policy, according to parents' report. The changes impacted research on Chinese adoptees (especially children at younger ages), as it becomes more difficult to recruit children within certain selection criteria. An agency representative shared that most Chinese adoption cases happened between 1995 and 2005 with the agency, indicating that most studies thus focused more on adolescents. The difficulty added to recruiting young adoptees/parents with young children, but also makes the research on young adoptees valuable.

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Appendix A: Demographic Information Survey

Your email address: _____ (Collect in order to share results with you once the

study is completed)

1. You are the ___ of the child

   1 = Mother; 2 = Father

2. What is your role in providing care to the child?

   1 = Primary Caregiver; 2 = Secondary Caregiver; 3 = Equal Caregiver

3. Your age is ___ years old

4. What is the current age of your child? ___ (e.g., 3.5 means 3 years 5 months; 6.0 means 6
   years 0 month)

5. How old was your child at the time of arrival in the U.S.? ___ (e.g., 0.8 means 0 year 8 months;
   1.9 means 1 year 9 months)

6. How many children do you have (including the child you describe in the study)? _____

7. What is the highest level of education that you have attained?

   1 = Some high school

   2 = GED

   3 = HS diploma

   4 = Some college

   5 = Bachelor's degree

   6 = Some graduate

   7 = Master's degree

   8 = Doctoral degree

8. What is the highest level of education that your spouse has attained?

   1 = Some high school

2 = GED

3 = HS diploma

4 = Some college

5 = Bachelor's degree

6 = Some graduate

7 = Master's degree

8 = Doctoral degree

9. Was your child in a Chinese orphanage for more than 6 months before arrival in the U.S.?

1= Yes; 2 = No

10. The child's weight was at the time of arrival in the U.S. was considered as:

1 = Below normal range

2 = Within normal range

3 = Above normal range

4 = Do not know

11. How much do you know about the quality of your child's experiences in China prior to adoption?

1 = I know nothing about it

2 = I know little about it

3 = I know some about it

4 = I know pretty much about it

5 = I am very knowledge about it

12. What is your perception of the quality of the care that your child received in the orphanage?

1 = Was not in an orphanage

2 = High quality care

3 = Acceptable quality care

4 = Poor quality care

13. Your employment outside home

   1 = Above or equals to 20 hours/week

   2 = Below 20 hours/week

   3 = No employment outside of home

14. Your spouse's employment outside home

   1 = Above or equals to 20 hours/week

   2 = Below 20 hours/week

   3 = No employment outside of home

Appendix B: Adapted Attachment Q-Sort

(Waters & Deane, 1985; Adapted by Chisholm, Carter, Ames, & Morison, 1995)

Please rate each item on a 5-point scale in which:

1 = Very unlike my child; 2 = Unlike my child; 3 = Neither like nor unlike my child

4 = Like my child; 5 = Very like my child.

____ 1. Your child readily shares with you or lets you hold things if he/she is asked to.

____ 2. When your child returns to you after playing, he/she is often fussy for no clear reason.

____ 3. Your child follows your suggestions readily even when they are clearly suggestions rather than orders.

____ 4. Your child keeps track of your location when he/she is playing around the house. For example, he/she calls now and then or he/she takes notice if you change rooms or activities.

____ 5. Your child sometimes gives the impression that he/she wants to be put down, and then fusses or wants to be picked right back up.

____ 6. Your child clearly shows a pattern of using you as a base from which to explore, that is, he/she moves out to play, returns, and then moves out to play again.

____ 7. Your child is demanding and impatient with you. He/she fusses and persists unless you do what he/she wants right away.

____ 8. Your child follows you when he/she is asked to do so. Refusals or delays which are playful don't count unless they are clearly disobedient.

____ 9. Your child recognizes when you are upset. He/she becomes quiet or upset or he/she tries to comfort you, or even asks what is wrong.

____ 10. When you pick your child up, he/she puts his/her arms around you or puts his/her arm on your shoulder.

____ 11. Your child acts like he/she expects you to interfere with his/her activities when you are

simply trying to help him/her with something.

___ 12. If you reassure your child by saying something like "It's OK" or "It won't hurt you" he/she will approach or play with things that initially made him/her cautious or afraid.

___ 13. When your child plays with you, he/she plays roughly. For example, he/she bumps, scratches, or bites even though he/she does not necessarily mean to hurt you.

___ 14. Your child is easily upset if you make him/her change activities, even if the new activity is something he/she often enjoys.

___ 15. When you enter a room that your child is in, he/she quickly greets you, without you having to greet him/her first. For example, he/she smiles, shows a toy, gestures or says "Hi".

___ 16. If your child is frightened or upset, he/she stops crying and quickly recovers if you hold him/her.

___ 17. When you don't do what your child wants right away, he/she acts as if you were not going to do it at all. For example, he/she fusses, gets angry, walks off to do other activities, etc.

___ 18. **At home**, your child gets upset or cries when you walk out of the room. **Note:** *May or may not follow.*

___ 19. Your child easily becomes angry at you.

___ 20. Your child uses your facial expressions as a good source of information when something looks risky or threatening.

___ 21. Your child cries as a way of getting you to do what he/she wants.

___ 22. When something upsets your child he/she tends to stay where he/she is and cries.

___ 23. If you move very far as your child is playing, he/she follows along and continues to play in the area you have moved to. He/she doesn't stop playing, doesn't get upset and doesn't have to be called or carried along.

Appendix C: Five Item Indiscriminately Friendly Behavior Measure

(Chisholm, Carter, Ames, & Morison, 1995)

The following questions are regarding your child's interactions with others. Please use the scale below to answer these questions.

___ 1. How friendly is your child with new adults?

0 = generally not friendly (e.g. wary, does not approach new adults, clings to parents).

0 = mixed reaction (e.g. usually friendly but sometimes cries, friendly to some strangers but not others, wary at first but then warms).

1 = very friendly, interacts freely with all new adults

___ 2. Has your child ever been shy or behaved in a strange manner?

1 = child has never been shy or behaved in a strange manner

0 = child has been shy or behaved in a strange manner consistently throughout life in United States

1 = initially behaved in a strange manner, no longer does so

0 = did not behave in a strange manner or shy before, now does

0 = child has been shy or behaved in a strange manner, no time frame specified

___ 3. What does your child do when he/she meets new adults?

0 = child has not met any new adults

0 = stands back, observes, evaluates

1 = approaches adult (shows toys, speaks, asks questions)

0 = is upset by new adults (e.g., cries, clings to parents, covers eyes)

0 = respondent doesn't know

0 = child is indifferent to new adults

___ 4. How willing would your child be to go home with an adult he/she had just met?

0 = no, never has been willing

1 = yes, always has been willing to

0 = yes initially, currently no

1 = no initially, currently yes

0 = respondent doesn't know

1 = yes, sometimes

___ 5. Does your child have a tendency to wander? If yes, Is your child subsequently distressed when he/she finds him/herself separated from you?

0 = no, child does not wander off, has no opportunity (e.g., is kept in house or yard)

0 = no, does not wander off

0 = yes, child wanders, then is distressed at separation

1 = yes, wanders off and is not distressed at separation

0 = respondent doesn't know

Appendix D: Parenting Styles and Dimensions Questionnaire Survey Short Version

(Robinson, Mandelco, Olsen & Hart, 2001)

The following pages contain a list of behaviors that parents may exhibit when interacting with their children. The questions are designed to measure *how often you* exhibit certain behaviors towards your child(ren).

I exhibit this behavior:

1 = Never

2 = Once in Awhile

3 = About Half of the Time

4 = Very Often

5 = Always

___ 1. I am responsive to my child's feelings and needs.

___ 2. I use physical punishment as a way of disciplining my child.

___ 3. I take my child's desires into account before asking him/her to do something.

___ 4. When my child asks why he/she has to conform, I state: because I said so, or I am your parent and I want you to.

___ 5. I explain to my child how I feel about the child's good and bad behavior.

___ 6. I spank when my child is disobedient.

___ 7. I encourage my child to talk about his/her troubles.

___ 8. I find it difficult to discipline my child.

___ 9. I encourage my child to freely express (himself)(herself) even when disagreeing with me.

___ 10. I punish by taking privileges away from my child with little if any explanations.

___ 11. I emphasize the reasons for rules.

___ 12. I give comfort and understanding when my child is upset.

___ 13. I yell or shout when my child misbehaves.

___ 14. I give praise when my child is good.

___ 15. I give into my child when the child causes a commotion about something.

___ 16. I explode in anger towards my child.

___ 17. I threaten my child with punishment more often than actually giving it.

___ 18. I take into account my child's preferences in making plans for the family.

___ 19. I grab my child when being disobedient.

___ 20. I state punishments to my child and do not actually do them.

___ 21. I show respect for my child's opinions by encouraging my child to express them.

___ 22. I allow my child to give input into family rules.

___ 23. I scold and criticize to make my child improve.

___ 24. I spoil my child.

___ 25. I give my child reasons why rules should be obeyed.

___ 26. I use threats as punishment with little or no justification.

___ 27. I have warm and intimate times together with my child.

___ 28. I punish by putting my child off somewhere alone with little if any explanations.

___ 29. I help my child to understand the impact of behavior by encouraging my child to talk about the consequences of own actions.

___ 30. I scold or criticize when my child's behavior doesn't meet my expectations.

___ 31. I explain the consequences of the child's behavior.

___ 32. I slap my child when the child misbehaves.

Appendix E: Social Desirability Scale

(Haghighat,2007)

The Brief Social Desirability Scale includes four questions with two possible responses: Yes or No.

1 Would you smile at people every time you meet them? Yes _____   No _____

2 Do you always practise what you preach to people? Yes _____   No _____

3 If you say to people that you will do something, do you always keep your promise no matter how inconvenient it might be? Yes _____   No _____

4 Would you ever lie to people? Yes _____   No _____

Haghighat, R. (2007). The development of the brief social desirability scale (BSDS). Europe's

Journal of Psychology. Retrieved from http://ejop.psychopen.eu/article/view/417/315

Appendix F: Letter to Parents

Research on Attachment Security in Chinese Adopted Children

PENNSTATE

Yanhong Liu, M.A., Ph.D. Candidate
NCC, Nationally Certified Counselor
Counselor Education and Supervision
The Pennsylvania State University

PHONE: (828) 773-1509
EMAIL: YXL257@psu.edu

Dear Parent(s),

I am writing to cordially invite you to participate in a research study on attachment of Chinese adopted children with parents. The research is my dissertation project for Ph.D. degree in Counselor Education at the Pennsylvania State University (Penn State). It has been officially approved by the Institutional Review Board (IRB) at Penn State. Information included below is to help you understand a little more about the research. Please feel free to direct any questions to me regarding participation of the study.

Please check the following criteria before you agree to participate in the study:
(a) Participants have children adopted from China under two years (i.e., 24 months) at the time of adoption; (b) Participants' adopted children have stayed one year or above in the U.S. and are now under six years old; and (c) Participants and spouses are U.S. heterosexual couples

Significance and Contribution of the Research:

Attachment is considered as one of the most important themes in children's development and continues to be a significant matter when they grow up. Some parents also reported indiscriminately friendly behaviors in their children after adoption. This study is thus designed to investigate the attachment security and indiscriminate friendliness in Chinese adoptees, as well as important factors that predict attachment and the indiscriminate behaviors in children since adoption.

Because there is very little information found in literature on attachment between adopted children and parents and the indiscriminately friendly behavior, your participation in the study will be precious to enrich the body of knowledge concerning the topic. Your responses can be directly transformed to useful and concrete resources to guide the practice of adoption agencies, mental health professionals, and current and future parents who consider adopting children from China. In the short term, it will yield results concerning forming positive relationship between the participants (i.e., parents) and children. I believe that the study, in the long term, will ultimately benefit the development of children, in terms of both pre-adoption conditions and adjustment after adoption.

Another unique piece of this study is that results will be communicated to China Center for Children's Welfare and Adoption (CCCWA), in charge of Chinese adoption issues, if pre-adoption conditions (e.g., care quality in orphanages) are found significantly related to the

attachment development of children after adoption. It would thus make a potentially administrative role in improving children's lives in Chinese orphanage.

Important Note:

I have secured $750.00 funding which can be spent on this study. I am eager to use the money to facilitate the development of children adopted from China or those who are still in Chinese orphanages. I would like to donate the money, on behalf of your name, to charities/organizations as you name.

Please email me (via YXL257@psu.edu) with: 1. The name of the charity/organization; 2. Your name and contact information, if you would like me to donate the money to specific units. Please also feel free to let me know if you would like for me to make use of the money on other channels related to Chinese adoption.

Participation Procedures:

Participation in the research includes filling out a survey either online or on paper version according to your preference. The survey contains approximately 80 questions (all are simple and easy-to-answer items) and takes about 30 minutes to complete. Your participation is strictly voluntary.
Please click the link below if you would like to complete an online survey.
Survey link: https://www.psychdata.com/s.asp?SID=164004
Please click **"continue"** to proceed to the next page of questions.

PLEASE email me (via YXL257@psu.edu) your mailing address if you prefer to fill out a paper version of the survey. I will mail it to you along with a returning envelop and postage needed.

Confidentiality:

Your responses to the survey will be kept confidential. You will not be identified by name in any reports using information obtained from the survey, and your confidentiality as a participant in this study will remain secure. The results may be used for the basis of articles and/or presentations in the future, aiming at facilitating/benefiting the development of children related to the research. I will not use your name or information that would identify you and your child(ren) in any publications or presentations.

I appreciate greatly your commitment to help with this study as well as your passion in supporting future development of children from orphanages. Your support has been highly appreciated and will add significantly to the development of children and families sharing interests/concerns of the topic.

Sincerely Yours,
Yanhong Liu, Ph.D. Candidate
326 Cedar Building
The Pennsylvania State University
University Park, PA 16802
Cell: 828-773-1509
Email: YXL257@psu.edu

Appendix G: Letter to Adoption Agencies

Dear **AGENCY NAME**,

My name is Yanhong Liu. I am originally from Chongqing, China. I learned about your organization from families with children adopted through your agency. I am sending this message to request your help to share my research topic to parents of interests. The project is my dissertation project and has been supported by faculty members in my dissertation committee. I am hoping to gain parents' response to survey questions in my study. I also attached a "Letter to Parents" with more information about the research, its contributions, and participation procedures, to help parents make a decision. PLEASE share this message along with the attached letter to parents whom might be interested. I appreciate your time and attention to this.

As a brief self-introduction, I am a Ph.D. candidate in Counselor Education at the Pennsylvania State University (Penn State). I am currently working on my dissertation on attachment between parents and children adopted from China. My research is proposed to help form positive attachment relationships between parents and children adopted from China. The study has been officially approved by Penn State Institutional Review Board (IRB).

Parents' responses to the research will be directly transformed to useful and concrete resources to guide the practice of adoption agencies, mental health professionals, and current and future parents who consider adopting children from China. In the short term, it will yield results concerning forming positive relationship between the participants (i.e., parents) and children. The study, in the long term, will benefit the development of children, in terms of both pre-adoption conditions and adjustment after adoption. The research needs parents' response to questions in a survey designed to assess attachment behaviors in child(ren) and parents' parenting styles. So if parents have children adopted under two years old (at the time of arrival) and who are now under six years old, please fill out the survey below.

The link to the online survey is:
https://www.psychdata.com/s.asp?SID=164004

Another unique piece of this study is that results will be communicated to China Center for Children's Welfare and Adoption (CCCWA), in charge of Chinese adoption issues, if pre-adoption conditions (e.g., care quality in orphanages; nutrition issues in orphanages) are found significantly related to the attachment development of children after adoption. It would thus make a potentially administrative role in improving children's lives in Chinese orphanage.

I am passionate about research/practices related to adoptive families with children from China, with strong desire to make a difference in the lives of children here in the U.S. and those who are still in Chinese orphanages. If you and/or other parents have any questions about my study, please feel free to contact me by email YXL257@psu.edu, or at my cell 828-773-1509.

I am looking forward to hearing from you.

Sincerely,
Yanhong Liu, Ph.D. Candidate
Nationally Certified Counselor
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The Pennsylvania State University
University Park, PA 16802
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Appendix H: Research Flyer

Exhibited by Families Blessed with the World's Children (FBWC)

Attachment in U.S. Families with Children From China

This project looks at the attachment patterns between parents and children adopted from China. It examines important factors that are related to the attachment outcomes. For parents who are interested in the topic, please take some time to fill out a survey.

Results will be shared with you once the study is completed.

You may be eligible to participate:

- If you have child(ren) adopted from China under two years (i.e., 24 months) when arrived in the U.S.
- Your child(ren) is/are under six years old currently

If you have more than one child within the age range, please feel free to fill out as many as needed, with one survey for each child.

For more information, contact:
Yanhong Liu, Ph.D. Candidate
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YANHONG LIU, M.A., NCC

Email: budfromsnow@gmail.com

EDUCATION

- **Ph.D.,** Counselor Education and Supervision
  The Pennsylvania State University, University Park, PA, August 2015
- **M.A.,** Professional School Counseling
  Appalachian State University, Boone, NC, August 2011
- **B.A.,** English & International Trade
  Chongqing Technology and Business University, China, July 2007
- **Professional Certifications,** Nationally Certified Counselor (NCC #322109)

PROFESSIONAL EXPERIENCE

Teaching

- **Instructor,** Indiana University of Pennsylvania, Indiana, PA
  - Fall 2014: COUN 659 Secondary School Counseling Practicum
- **Co-Instructor**, The Pennsylvania State University, University Park, PA
  - Fall 2014: CN ED 506 Individual Counseling Skills and Procedures
  - Spring 2013 & 2014: RHS 303 Group Work in Rehabilitation and Human Services
- **Graduate Teaching Assistant,** The Pennsylvania State University, University Park, PA,
  - Summer 2014: CI295 D/A Philadelphia Urban Seminar
- **Teaching Fellow**, Appalachian State University, Boone, NC
  - Fall 2011: HPC 5840/4840 Human Relations & Interactions
  - Spring 2011: CHN1020-101 & 102 Beginning Chinese II

Research

- **Graduate Research Assistant,** The Pennsylvania State University, University Park, PA, August 2013 – present
- **University Graduate Fellow,** The Pennsylvania State University, University Park, PA, August 2012 – August 2013
- **Graduate Research Assistant,** Appalachian State University, Boone, NC, August 2009 – May 2011

Counseling

- **Career Counselor Intern & Practicum,** Career Services, The Pennsylvania State University, University Park, PA, Fall & Spring 2013
- **Doctoral Counselor Practicum,** The Pennsylvania State University CEDAR Clinic, University Park, PA, Fall 2012
- **School Counselor Intern,** Watauga High School, Boone, NC, Spring 2011
- **School Counselor Practicum,** Hardin Park Elementary School, Boone, NC, Fall 2010
- **Psychological Counseling Assistant (part-time volunteer),** Chongqing Yongchuan Xuanhua Middle School, China, July 2006 – October 2007

ADDITION WORK EXPERIENCE

- **Consultant (full-time):** Shanghai BOB Intellectual Property Service Ltd., Guangzhou/Shanghai, P. R. China, November 2007 – June 2009

PULICATIONS

- **Liu, Y.** & Hazler, R. (2015). All foreign born adoptees are not the same: What do parents and counselors need to know? *The Professional Counselor (Special Issue)*, *5*(2), 238–247.
- **Liu, Y.** & Hazler, R., Attachment dynamics between Chinese adoptees and their U.S. adoptive parents: A phenomenological study (In progress, anticipated submission: August 2015)