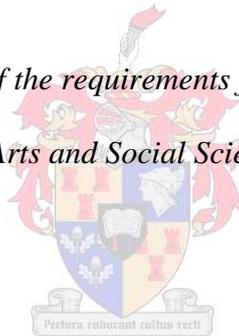


**A COMPARISON OF THE EARLY SOCIAL EXPERIENCES OF THREE MONTH
OLD INFANTS IN KHAYELITSHA AND THE GREATER STELLENBOSCH AREA**

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*Thesis presented in fulfilment of the requirements for the degree of Master of Arts
(Psychology) in the Faculty of Arts and Social Sciences at Stellenbosch University*



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Declaration

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Abstract

In all communities parents want to pass on strategies that will promote the survival of their children and foster their cultural competence. The ‘component model of parenting’, formulated by Keller (2000; 2007), captures universal propensities of parenting as well as cultural differences. The model hypothesizes that parenting styles are composed of different parenting systems, namely primary care, body contact, body stimulation, object stimulation, face-to-face interaction, and vocal stimulation. The proximal parenting style emphasizes primary care, body contact, and body stimulation, while the distal style of parenting focuses on verbal exchanges, object stimulation, and face-to-face interaction within the context of exclusive attention. According to Keller (2007), the dominance of certain systems over others can vary across cultural communities. This study aims to examine the cross-cultural conceptions of different adaptive and non-adaptive attachment qualities in three month old infants and their caregivers. This study explores whether culture-specific norms affect the development of different attachment qualities. It focuses on describing indigenous conceptions about parenting practices, socialization strategies, and caregiver beliefs. The study was conducted in the Western Cape region of South Africa. Participants included 25 mothers living in the greater Stellenbosch area and 29 mothers living in Khayelitsha. The measures included a socio-demographic questionnaire, spot observation videos, a picture card interview, and a socialization goals questionnaire. Data were coded according to coding schemes developed by Otto (2008). Data were analysed using descriptive statistics, t-tests, Mann-Whitney tests, and ANOVAs. The results indicated the Khayelitsha sample favoured a multiple caregiving arrangement, the proximal parenting style, and emphasized the importance of relational socialization goals. The greater Stellenbosch sample favoured an exclusive caregiving arrangement and emphasized the importance of autonomous socialization goals. Contrary to our expectations the greater Stellenbosch sample also

favoured the proximal parenting style. The data demonstrates that cultural differences influence parenting practices and strategies. The data reported in this study challenge attachment theory's universalism and provide an exploratory analysis of the different cultural conceptions regarding adaptive and non-adaptive attachment qualities. Further research using the same methodology needs to be conducted in South Africa.

Opsomming

In alle gemeenskappe wil ouers strategieë oordra wat die oorlewing van hulle kinders bevorder en hulle kulturele bevoegdheid koester. Die ‘component model of parenting’, wat universele neigings en kulturele verskille in ouerskap inkorporeer, is geformuleer deur Keller (2000; 2007). Die model se hipotese stel voor dat ouerskap style uit verskillende ouerskap sisteme bestaan, naamlik primêre sorg, liggaamlike kontak, liggaamlike stimulasie, voorwerp stimulasie, een-tot-een interaksie, asook verbale stimulasie. Die proksimale ouerskap styl benadruk primêre sorg, liggaamlike kontak, en liggaamlike stimulasie. Daarteenoor fokus die distale ouerskap styl op verbale interaksie, voorwerp stimulasie, en een-tot-een interaksie binne die perke van eksklusiewe aandag. Volgens Keller (2007), kan die dominansie van sekere style bo ander verskil regoor kulturele gemeenskappe. Die studie poog om die onderskeie multikulturele beskouinge rondom verbondenheids aanpassings, of gebrek daaraan, by drie maande oue kinders en hul versorgers te ondersoek. Die studie ondersoek of kultuur-spesifieke norme die ontwikkeling van verskillende verbondenheids kwaliteite affekteer. Dit fokus op die bekrywing van inheemse beskouinge omtrent ouerskap, sosialisering strategieë, en die versorger se oortuigings. Die steekproef was gebaseer in die Wes-Kaap van Suid-Afrika. Die steekproef het bestaan uit 25 moeders wat in die groter Stellenbosch area woon en 29 moeders wat in Khayelitsha woon. Die maatstawwe het ‘n sosio-demografiese vraelys, 20 op die plek observasie videos, ‘n onderhoud met prentjie kaarte, en ‘n sosialisering doel vraelys ingesluit. Die data was gekodeer volgens koderings skemas wat deur Otto (2008) ontwikkel was. Die data was toe geanaliseer met beskrywende statistiek, t-toetse, Mann-Whitney toetse, en ANOVAs. Die resultate toon dat die Khayelitsha steekproef ‘n verskeie versorging benadering en die proksimale ouerskap styl verkies het. Hulle het die belangrikheid van verwante sosialisering doelwitte benadruk. Die groter Stellenbosch steekproef het ‘n eksklusiewe versorgings benadering verkies en het die

belangrikheid van autonome sosialisering se doelwitte benadruk. Teen verwagtinge het hulle ook die proksimale ouerskap styl verkies. Die data dui aan dat kulturele verskille beïnvloed ouerskap praktyke en strategieë. Die data wat in hierdie studie gerapporteer is, bevraagteken gehegtheidsteorie se universalisme en verskaf 'n verkennende analise van die verskillende kulturele opvattinge oor aanpasbare en nie-aanpasbare gehegtheids eienskappe. Verdere navorsing volgens dieselfde metodes moet nog in Suid Afrika gedoen word.

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CHAPTER 1

Introduction

1.1 Attachment theory

There are currently more than 160 000 academic journal articles on attachment listed in EBSCO, an international electronic research database (Otto, 2008). Originating from Bowlby's seminal contribution, attachment has been placed at the centre of human development, emphasizing how socio-emotional development is fundamental to all developmental domains (Keller, 2002). The central focus of attachment theory has been the dyadic bond between an infant and its mother, with the mother as the sole contributor to the child's physical and emotional wellbeing (Ainsworth, Bell, & Stayton, 1974; Baer & Martinez, 2006; Bowlby, 1982). Research has expanded from a focus on infancy to attachment in adolescence, neurophysiological regulation, attachment in adulthood, and clinical applications (Keller, 2007). However, the theoretical and methodological foundations of attachment theory have remained largely unaffected, even though proposals for their refinement have been made (Keller, 2008). In Bowlby's original formulation of attachment theory (Bowlby, 1982), one of the most important functions of the attachment system is adaptation to environmental conditions. Despite this emphasis, ethological attachment research has concentrated on one model of early infant-caregiver relationships as the universal strategy, namely the independent model of Western¹ middle class families (Otto, 2008). The differential influence of socio-cultural environments on attachment relationships has largely been neglected. This has resulted in numerous claims by cultural psychologists, anthropologists, and sociobiologists to systematically include contextual and cultural variation into attachment theory being largely ignored (Hrdy, 1999).

Van IJzendoorn and Sagi-Schwartz (2008) have acknowledged that there are contextual variations when reviewing attachment studies of non-Western origin. They confirm that there is a

¹ Throughout this study, "Western" refers to areas strongly influenced by European immigration. It is clear that this term is limited.

need for a change from what has been a predominantly dyadic perspective to a network approach that examines the influence of multiple caregivers. This could have radical consequences for the definition and assessment of attachment theory (Van IJzendoorn & Sagi-Schwartz, 2008). According to Keller (2007), the diverse realities in which children are raised are not adequately addressed and applied to attachment theory and the methodologies used to measure it. Addressing this would require a move from the view of attachment as a universal human need that has the same form across cultures. Consequently, we need to address the possibility that, while attachment is a universal human need, it may look different and have different developmental trajectories across cultural environments.

This study examines two groups in South Africa in order to investigate whether there are cultural differences in attachment relationships between infants and their caregivers. South Africa is a country characterized by high levels of inequality and poverty (Dawes, 2002). Owing to Apartheid, the Black² South African population has been affected by high levels of adversity. Inequality and poverty have impacted various aspects of child development, infant mortality, educational attainment, homelessness, and criminal misconduct (Dawes, 2002). This study is exploratory as it employs a methodology that has hitherto not been used in South Africa and utilizes a small sample size.

This study links to the origins of attachment theory in that it employs an interdisciplinary approach. However, it differs from Bowlby's approach in two fundamental respects: First, the evolutionary/ethological foundation does not necessarily imply that attachment has the same shape, emerges in the same way, or has the same consequences for children's subsequent development across cultures (Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000); Second, the few studies of attachment in non-Western contexts have underestimated apparent differences between and overestimated the functional similarity of different behaviours (e.g., Otto, 2008; True, Pisani,

² Throughout this study, "Black" refers to Black South Africans, "White" refers to Caucasian South Africans, and "Coloured" refers to South Africans of mixed race.

& Oumar, 2001). These two assumptions, in order to have adaptive value, necessitate the re-conceptualisation of attachment as an evolved universal developmental task that has to be solved in a contextual and culturally sensitive manner.

1.2 Rationale for study

The rationale for conducting this study is threefold. Firstly, this research will contribute to the body of knowledge which focuses on development within and differences between cultures. Secondly, it will provide data that will contribute towards a potential re-conceptualization of attachment across cultures. Finally, this research examines attachment qualities and caregiving strategies of two different cultures in order to determine whether or not attachment processes are significantly different across cultures.

1.3 Overview of chapters

Chapter 2 reviews Bowlby's work and the theoretical foundation of attachment theory. The two most prominent assessment methods of attachment are described and critiqued. The role of culture in development is briefly examined. Subsequently, an alternative perspective is presented and its relationship to attachment theory and the present study is examined. The chapter is concluded with an overview of the aims and hypotheses of this study. Chapter 3 describes the methodology that was followed in this study, including research design, selection of participants, data collection, and data analysis procedures. The results – specifically the socio-demographic characteristics, spot observations, picture card interview, and socialization goals – are presented in Chapter 4. Chapter 5 discusses the findings, implications of the data, strengths and limitations, and possible directions for future research.

CHAPTER 2

Literature Review

2.1 Introduction

Attachment theory, as outlined by the British psychiatrist and psychoanalyst Bowlby, has become one of the major developmental theories of the last 50 years, influencing scientists and practitioners alike (Otto, 2008). This chapter reviews the theoretical foundations and criticisms of attachment theory. The two most prominent measures used to assess attachment relationships between infants and their primary caregivers, namely the Strange Situation Procedure and the Attachment Q-sort technique, are examined. Culture, and the role it plays in child development, is also discussed. The cross-cultural applicability of attachment and the significance of culture and socialization strategies are discussed. An alternative perspective is presented, followed by an overview of the present study.

2.2 Bowlby and attachment theory

John Bowlby (1907-1990) was approached by the World Health Organization (WHO) in 1951 to conduct a study about the needs of homeless children who had been orphaned due to the Second World War (Vicedo, 2011). At this point, Bowlby was already convinced of the importance of parent-child interactions in the development of a child's personality (Ainsworth & Bowlby, 1991). He believed that an inadequate amount of love and care from the mother would play a large role in the development of aggressive, anxious, and neurotic characteristics in children (Vicedo, 2011). At the time, Bowlby was addressing key concerns of the post-war period. This, coupled with his involvement with the WHO, led to his views becoming a significant point of reference in discussions about personality formation, the family, and parental roles (Vicedo, 2011). Further to this, there was extensive anxiety about shifting gender roles during the early Cold War years. Bowlby's views were influential as they emphasized the importance of the traditional family unit in which the father provides financial support and the mother is responsible for child-rearing

(Vicedo, 2011). Bowlby continued his theory-based investigation of the relevant literature in ethology, evolution theory, systems theory, cognitive psychology, and psychoanalytic theory. This assisted him with the development of attachment theory (Ainsworth & Bowlby, 1991).

2.2.1 Theoretical foundation of attachment theory

Attachment is defined as the primary emotional bond emerging during the first year of life between an infant and her³ caregiver(s). According to Bowlby, this bond provides the basis for her understanding of herself and others (Ainsworth et al., 1974; Baer & Martinez, 2006; Bowlby, 1982). This bond is expressed in attachment behaviours such as crying, clinging, and following with the purpose of establishing and maintaining closeness, particularly in stressful situations (Bowlby, 1969). The attachment instinct encourages infants to maintain close proximity with the primary caregiver as a way of being protected from potential harm. These attachment behaviours in infants appeared to be instinctive, which led Bowlby to believe that the attachment system has a strong biological basis. He observed that these behaviours changed with age, primarily due to situational factors, i.e., preference was shown towards a person who attended to needs and was caring.

Four phases of attachment

According to Bowlby, there are four phases of attachment (Bowlby, 1969). The first phase is **pre-attachment** (birth to 1 month), where newborns do not discriminate between people. They process information by relying on innate cognitive capabilities. The second phase is **attachment in the making** (2 to 6 months), where infants begin to discriminate and respond to one or a few caregivers. At this age, infants begin to actively interact with caregivers, for example, smiling when recognising a familiar face. The next phase, **clear-cut attachment** (6 to 18 months), begins to manifest with the development of the child's motor skills. This phase is apparent when the child is physically able to keep or seek proximity and contact with a specific caregiver (Otto, 2008). This specific caregiver typically provides the child with a secure base. The final phase, **goal-**

³ Throughout this study, the infant will be referred to in the feminine pronoun.

corrected partnership (2 to 3 years), is characterized by the child's growing understanding of the attachment figure's motives and plans. The primary caregiver transforms from a secure base to a goal-corrected partnership (Waters, Posada, Crowell, & King, 1994).

Although Bowlby focused on these stages in attachment development, it is important to note that attachment does not develop in isolation (Waters et al., 1994). Attachment relationships develop as part of a broader spectrum of cognitive and social advances and attachment development does not stop at the end of infancy. The secure base provided by the primary caregiver develops throughout infancy, childhood, adolescence, and into adulthood (Waters et al., 1994).

2.2.2 Criticisms of Bowlby and attachment theory

There are several criticisms of Bowlby and attachment theory:

1. Bowlby was criticised from a psychoanalytic perspective. According to Kernberg (cited in Zepf, 2006), Bowlby neglected the internal world and internalized object relations as major structural organizers. Furthermore, Dowling (cited in Zepf, 2006) criticized Bowlby for ignoring the dynamic unconscious, the interplay of impulse and defence, conflict, and compromise formation.

2. Keller (2008) has argued that child development research has increased substantially over the last 30 years, but in spite of these advancements, attachment theory has not been substantially refined or developed (Mercer, 2009). According to Keller (2008), attachment theory lacks theoretical clarity and well-defined concepts. Infant research has determined that infants have a range of perceptual and cognitive abilities that allow them to interact competently with the physical and social world (Keller, 2008). For example, infants prefer human faces to other visual displays (de Haan & Groen, 2006), they remember actions over several days, they have expectations regarding the nature of social interactions (Bremner & Fogel, 2001), and they have an understanding of object permanence (Baillargeon, 1987). At the time they were writing, Bowlby

and Ainsworth did not know about infants' mental and representational capabilities. However, it is possible that they could have known about the socialization strategies of different cultures from cultural psychologists and anthropologists of their time (Konner, 1977; LeVine 1977; Super & Harkness, 1980). Yet, the developmental process that they proposed (according to Keller) was focused on the Euro-American middle-class context for children's development; i.e., the mother is considered the primary caregiver with time for prolonged and exclusive interaction (Keller, 2008). Children reach major developmental milestones in all developmental domains during the first two years of life. They are representatives of their cultural environments with motor mobility, language, socio-cognitive capacities, and motivational underpinnings (Keller, 2008); therefore, more focus should be placed on culture in the development of attachment theory.

3. Another criticism of attachment theory is that it highlights the importance of the mother-child relationship but neglects the role of other social partners (Thompson, 2005). Attachment theory has largely ignored literature on family systems, peer relationships, and the effects of social institutions, such as child care and schools, on child development (Thompson, 2005). According to Bowlby, children who are adequately loved and cared for by their mother will develop a secure attachment (Vicedo, 2011). This notion has been criticized for downplaying the role of the father, the effect of peer relationships, friendships, romantic partnerships, and other interactions (Thompson, 2005). These relationships are influenced by the mother-child relationship; as such, the infant's early experience with the mother determines the outcome of future relationships. However, social network analysis insists that the mother-child relationship is not the sole relationship from which infants develop security (Thompson, 2005). Attachments to the mother, father, and possibly grandparents, childcare providers, and others constitute the normative social ecology that attachment theory must address (Thompson, 2005).

4. While attachment theory takes evolution into account, it has been argued that it neglects neo-Darwinian evolutionary views (Keller, 2008). Bowlby has been credited with including the evolutionary basis of attachment in his framework, yet he limited himself to ethology and animal

psychology/biology (Keller, 2008). Ethology and animal psychology/biology focus on universal laws that have evolved as adaptive responses to selection pressures. However, the neo-Darwinian evolutionary theory emphasizes the importance of contextual information when addressing adaptation. In other words, different ecological circumstances will influence individuals' selection of the behaviours that encourage the highest reproductive outcomes (Keller, 2008). According to Keller (2008), the definition of attachment needs to be reviewed due to different contextual and ecological affordances and restraints.

For the purpose of this study, I will focus on the lack of emphasis on the influence of culture in Bowlby's work. While Bowlby (1982) acknowledged that the environment plays a role in the development of mother-child relationships, Keller (2007) argues that culture is more than an independent variable that causes distributional differences.

2.3 Assessment of attachment security

It was in a cross-cultural context that Bowlby's theory was first empirically investigated (Bretherton, 1992). Since then, there have been approximately 3000 assessments of attachment that have been reported, taking place in more than 20 countries in North and South America, Europe, Asia, Australia, and Africa (Minde, Minde, & Vogel, 2006). Two of the most prominent measures used to assess attachment relationships are the Strange Situation Procedure (Ainsworth, Blehar, Waters, & Wall, 1978) and the Attachment Q-sort (Waters & Deane, 1985). Both of these measures have been applied to populations across the world to investigate whether attachment is universal. As a result, they have been very influential and have played a substantial role in the development of attachment research (Minde et al., 2006).

2.3.1 Strange Situation Procedure (SSP)

Ainsworth developed the Strange Situation Procedure (Bretherton, 1992). Ainsworth joined Bowlby's research team in the early 1950s and was very interested in his theory of attachment. She believed that it needed to be tested empirically, a conviction which led to her

project in Uganda (Ainsworth & Bowlby, 1991). This study, which involved 28 Ganda babies and their mothers, enabled her to observe the initial formation of attachment between an infant and her mother. Ainsworth then moved to Baltimore and developed the SSP. Ainsworth et al. (1978) maintained that the SSP was created because one method, namely natural observations during house visits, was not adequate for the study of attachment behaviours (Otto, 2008). The SSP was a necessary adaptation of observational methods in order to study attachment behaviours within the context of a middle-class white population in the United States of America (Otto, 2008). The SSP consists of a sequence of short episodes of mother-child social interactions, stranger confrontations and separations from the mother in a 20 minute laboratory setting (Ainsworth & Wittig, 1969). Children between 9 and 18 months are observed in terms of exploratory behaviour and reaction when reunited with the caregiver after a short separation. The purpose is to increase the stress level of the child so that attachment behaviours are elicited. Initially, Ainsworth identified three different kinds of attachment behaviour based on the SSP. The attachment categories are summarised as follows (Ainsworth et al., 1978; Belsky & Rovine, 1988):

Secure attachment: infants actively seek contact with their mothers on the mothers' return after separation. They calm down when reunited with their mothers, and use their mothers as a secure base from which to explore. Infants with secure attachment are often joyful in the presence of the parent, display negative emotion openly and show confidence in knowing that their needs are being met by the caregiver (Ainsworth & Bowlby, 1991).

Anxious-avoidant attachment: infants tend to ignore or actively avoid their mothers upon their return. Those infants establish surprisingly close proximity to the stranger and actively engage in play with the stranger without using the mother for referencing. Infants with an avoidant attachment learn to reveal as little as possible about their inner experiences of negative effect. This makes sense against the background of the mothers who have been observed to be non-responsive to negative effect (Otto, 2008).

Anxious-ambivalent attachment: infants show great distress when left alone by their mothers and do not calm down when reunited with their mothers. They remain stressed and even show anger towards their mothers. Home observations indicated that anxious-ambivalent children have parents who ignore or misinterpret infants' emotional signals. Infants therefore display overtly intense negative emotions as they are not sure whether or not their needs will be met by their caregivers (Otto, 2008).

A fourth category, **disorganised attachment**, was added later (Main & Solomon, 1986; 1990). This type is characterised by infant behaviour such as freezing, crouching on the floor and other confused displays in the presence of the caregiver. The infants show signs of learned hopelessness or helplessness through either fearful affect generated by the caregiver or from other sources in the context of emotional unavailability of the caregiver.

2.3.2 Criticisms of the SSP

The SSP has been used to examine qualities of attachment in various diverse cultural contexts, e.g., in African cultures like the Dogon of Mali (True et al., 2001) and the Gusii of Kenya (Kermorian & Leiderman, 1986), as well as Western and non-Western urban populations (Otto, 2008). There are two criticisms regarding validity that need to be addressed:

1. It is questionable whether the extent of the distress experienced by the infant during the procedure is comparable and equivalent in various socio-cultural contexts. For example, it was observed that Japanese infants are less likely to experience separations from the mother; therefore they are more likely to become exceedingly distressed (Jin, Jacobvitz, Hazen, & Jung, 2012). The interplay between fear and attachment behaviours is not adequately addressed (Keller, 2008).

2. It is debatable whether observed behavioural reactions can be interpreted using the same set of criteria that supposedly indicate comparable affective states in various socio-cultural contexts (Otto, 2008). An example is the Grossmanns' study (Grossman, Grossman, Huber, & Wartner, 1981) of infant-mother attachment in North Germany (Lerner, 2006). The majority of the

sample was categorized as insecurely attached to their mothers: 49% were classified as anxious-avoidant. This was approximately double that of the American (Baltimore) sample. Grossmann et al. (1981) argue that this difference was due to the German mothers' outlook and parenting practices. According to Lerner (2006), German mothers in that region of Germany favour physical and interpersonal distance from their infants, often leaving them alone or pushing them away. This attitude is different to that of middle class parents in the USA (Lerner, 2006), and was based on a broader cultural attitude that emphasized independence and autonomy (Grossman et al., 1981).

In light of this evidence, Otto (2008) has argued that the same set of criteria cannot be used to interpret behavioural reactions across different cultural contexts. Bretherton (1992) argues that attachment researchers need to develop ecologically-valid measures to better explore cultural variations in attachment. These measures should be modified for different cultures and based on a deeper knowledge of parents' culture-specific beliefs and theories about family relationships.

2.3.3 The Attachment Q-sort technique (AQS)

The Q-sort technique (AQS), another prominent attachment assessment, was developed by Waters and Deane (1985) and applied to populations across the world (Minde et al., 2006). This method comprises a 90 to 120 minute home visit where regular interactions between the mother and child are observed. These interactions are evaluated using 90 cards that are organized according to specific criteria. The cards are used to determine whether the child experiences a secure attachment and displays the behaviour associated with it. This method has several advantages over the SSP. Firstly, it can be used for a larger age range (12 – 48 months). Secondly, it may have higher ecological validity because the mother-child interactions occur in the home as opposed to in a laboratory. Thirdly, it can be applied in cultures and populations where mother-child separations are unusual. Many infants and toddlers in non-Western countries have not been apart from members of their family and a brief separation could therefore be traumatic (Minde et al., 2006). Lastly, it is less intrusive and can therefore be used more frequently with the same child (Van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004).

2.3.4 Criticisms of the AQS

There are four key criticisms of the AQS:

1. The method is time-consuming. The home visits, albeit practical for the mother and child, are impractical for clinical application due to time constraints (Minde et al., 2006).
2. The observational database of mother-child interactions is typically not video recorded for archival and review purposes, and as such the observations cannot be further analyzed (Minde et al., 2006).
3. Unlike the SSP, it fails to differentiate between the types of insecurity experienced by the child (Van IJzendoorn et al., 2004).
4. Research that is based on the AQS depends on descriptions that focus on the assessment of emotional regulation and its expression. Emotional expressiveness differs considerably across cultures because of different display rules and social conventions (Matsumoto, Willingham, & Ollide, 2009). For example, many traditional communities do not support or permit the display of emotions, especially during interactions between adults and children (Otto, 2008). While the confrontation with a stranger can be considered to be a critical situation to elicit attachment behaviours (Kondo-Ikemura & Waters, 1995), the majority of a sample of Cameroonian Nso farmer children did not display any emotional expression when facing a stranger. The absence of emotional expressiveness is also reported from the Ivorian Coast Beng population (Gottlieb, 2004), and the Amazonian Piraha (Everett, 2009).

The criticisms concerning Bowlby and attachment theory, the SSP, and the AQS have highlighted that culture is a recurrent theme in the field and one which has been neglected. Bretherton (1992) points out that attachment measures should be modified for different cultures. It is apparent from all the above that culture is not adequately addressed when evaluating attachment relationships across different cultural contexts (Keller, 2008).

2.4 Culture and development

Culture consists of shared beliefs, behaviours, practices, and values that emerge out of social interactions between sets of individuals who occupy overlapping social and physical spaces (Olatundun, 2009). These beliefs and values are characteristic of a particular group of people. Culture has an effect on an assortment of things that influence all aspects of behaviour (Olatundun, 2009); for example, communities have various practices, beliefs, roles, norms, expressions, forms of organization and conflicts (economic, political, legal, religious, expressive and artistic) that affect community stability. This is closely connected to the different historical experiences and physical and social environments in which people live (Olatundun, 2009). Culture selects, emphasizes, and reinforces, from the universal repertoire, the behaviours that guarantee optimal generative success (Otto, 2008). Because of this, culture plays an important role in child development (New, 2010). According to LeVine et al. (1994), the local cultural way of thinking affects parents' actions; which in turn impacts on how they encourage or discourage their children to adopt certain behaviours.

Whiting and Whiting (1975) have argued that child development should be studied within the context of a wider community setting that, in turn, is shaped by the physical environment and history (Worthman, 2010). Whiting and Whiting focused on two questions: (1) Are children who are raised in societies with different beliefs and values fundamentally different from each other?; and (2) Can variables such as birth order, gender, and age overrule these cultural differences? (New, 2010). These questions provided the foundation for their Six Culture Study of Socialization Model (Whiting & Whiting, 1975). The Whiting model (Figure 1) aimed to provide the blueprint for psychocultural research (Worthman, 2010). This model illustrates that the environment and the history of an area determines the maintenance systems that are incorporated (Whiting, 1963). In other words, the climate, flora, fauna, the nature of the terrain, the amount of rainfall, and the location of the area (environment) determine the type of crops grown and the presence or absence of herding and fishing. These basic economic conditions help determine settlement and migration

patterns (history), which determine the type of houses and household composition. Both the environment and the history determine the methods which the society uses to acquire food (subsistence patterns), for example foraging, horticulture, pastoralism, agriculture, and industrialism, as well as what is necessary to produce goods (means of production). Additionally, they determine the social structure, systems of defence, law, and division of labour (maintenance systems) of a particular society. The model shows how maintenance systems, in turn, set the parameters for child-rearing practices, which include the number of caregivers, the disciplinary techniques, and the tasks assigned to children.

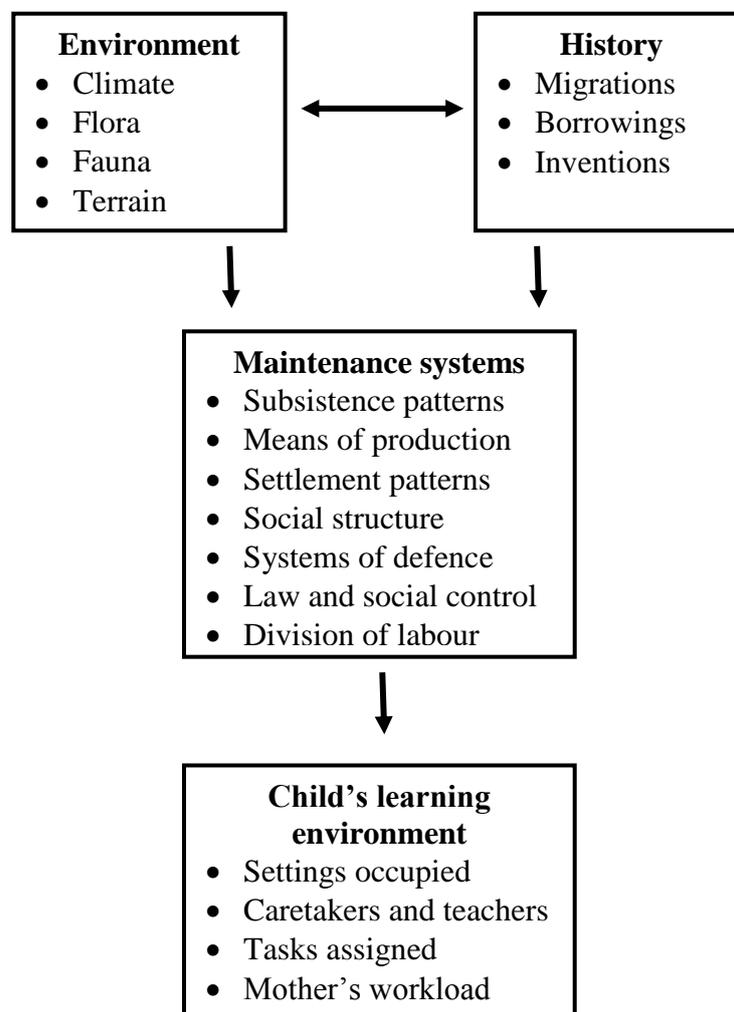


Figure 1. The Whiting model for psychocultural research

Whiting and Whiting (1975) sought to examine the transcultural validity of research findings based on studies that were conducted with samples of children in Europe and the USA.

They had observed that the majority of child psychologists assumed universality, albeit implicitly, of the findings from these samples. They also wanted to explore the validity of the hypothesis proposed by anthropologists that children of different cultures develop in a unique manner with no universal development characteristics. This focus on universality and cultural differences needs to be examined when studying child development and, specifically, attachment theory.

2.4.1 Cross-cultural applicability of attachment theory

According to Bowlby (1982), the attachment instinct is evolutionary and universal, and therefore applicable to all human infants across all cultures. However, he did acknowledge that the attachment behaviour of the individual was influenced by the environment and that different cultures, for example, will have different caretaking strategies (Bowlby, 1982).

Van IJzendoorn and Sagi-Schwartz (2008) argue that the cross-cultural applicability of attachment theory depends on four hypotheses. These hypotheses need to be confirmed in different cultures, ranging from Western to non-Western samples. The first hypothesis is the universality hypothesis – all infants become attached to one or more caregivers, except in extreme cases, i.e., mental retardation. The second hypothesis is the normativity hypothesis – the norm is that infants experience secure attachment. Third is the sensitivity hypothesis – a secure attachment will develop if the caregiver is sensitive and responds promptly to the infant's signals. This is one of the key principles of attachment theory and has been demonstrated in Western samples (De Wolff & van IJzendoorn, 1997). Lastly, the competency hypothesis – social and emotional competence is predicted later in life if the infant experiences a secure attachment.

Various studies have focused on these four hypotheses to provide support for the cross-cultural applicability of attachment theory (Kermoian & Leiderman, 1986; Tronick, Morelli, & Ivey, 1992; True et al., 2001). According to van IJzendoorn and Sagi (2001), these four hypotheses have been confirmed in other cultures and attachment theory may therefore claim cross-cultural validity. However, according to Keller (2008), when assessing cross-cultural applicability, one

cannot merely rely on these four hypotheses as evidence. The methodology used in the studies should also be examined.

2.5 The significance of culture and socialization strategies

According to Keller (2008), cultural influences on attachment have not been adequately addressed. Cross-cultural studies focusing on attachment have relied heavily on the SSP. Because the procedure was developed by Ainsworth after research in Africa and the USA, it was considered to represent an appropriate culture-sensitive method for various socio-cultural contexts (Van IJzendoorn, 1990; Van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2006). For example, the four kinds of attachment behaviours identified by the SSP are considered universal, with culture being regarded as an independent variable that causes distributional differences (Keller, 2007). The assumption that the SSP reveals the same universal attachment qualities in various cultural contexts neglects the fundamental role of culture in developmental processes. There are few studies (e.g., Harwood, Miller, & Irizarry, 1995) on attachment that have acknowledged the significant role that culture plays in child development. In order to understand whether attachment processes are fundamentally the same or fundamentally different across cultures, one needs to implement an emic approach which considers environmental conditions, social practices, cultural beliefs, and socialization strategies.

In all communities, parents want to pass on strategies that will promote the survival of their children and foster their cultural competence (Keller, 2007). Socialization strategies embody cultural curricula that represent the combined knowledge of previous generations within that environment (Nsamenang, 1992). Socialization strategies are hierarchically organized. The most abstract level consists of socialization goals that convey the developmental achievements that parents aim at; for example, becoming an independent, self-reliant individual and/or becoming a socially-interrelated person who is able to sustain harmony in relationships. Socialization goals are translated into a system of parental ideas, beliefs, and ethnotheories (Super & Harkness, 1996). These ideas are

expressed in behavioural strategies, consisting of contexts or activity settings which require actual behavioural interactions and communications.

Harwood et al. (1995) compared socialization goals and opinions of attachment amongst Anglo-American and Puerto Rican working- and middle-class mothers. This culture-sensitive study used pictures of Strange Situation behaviours and noted that maternal perceptions of desirable and undesirable attachment behaviours were different to the labels given to them by attachment theory. Mothers favoured behaviours labelled as insecure and rejected behaviours labelled as secure according to the SSP ratings. According to Harwood et al. (1995), maternal socialization goals were influenced by culture and socioeconomic status, which in turn affected the way the mothers evaluated attachment behaviours.

Rothbaum et al. (2000; 2004; 2007) found similar results when analysing Japanese attachment relationships. Japanese mothers associated security with dependence and harmony whereas American mothers linked security to independence and autonomy. He concluded that, to be successful in a specific environment, the context of that environment should be incorporated in the parental practices. In other words, the American mothers valued independence; therefore, they encouraged individuality and assertiveness in their children. According to LeVine et al. (1994), culture provides adaptive direction to the intrinsic capacities that all infants possess. The abovementioned studies indicate that the formation of culture-specific, desirable patterns of attachment differs across cultures in accordance with the socio-cultural environment.

2.6 The ecocultural model of development

The cultural study of development addresses universal developmental tasks that are resolved in culture-specific ways, proceeding along either the independent or the interdependent path (Greenfield, Keller, Fuligni, & Maynard, 2003). Keller proposed an adaptation to Whiting's model of psychocultural research, namely the ecocultural model of development (Otto, 2008). This

model illustrates the interrelatedness of ecological and socio-cultural conditions, socialization strategies, and developmental consequences (Figure 2).

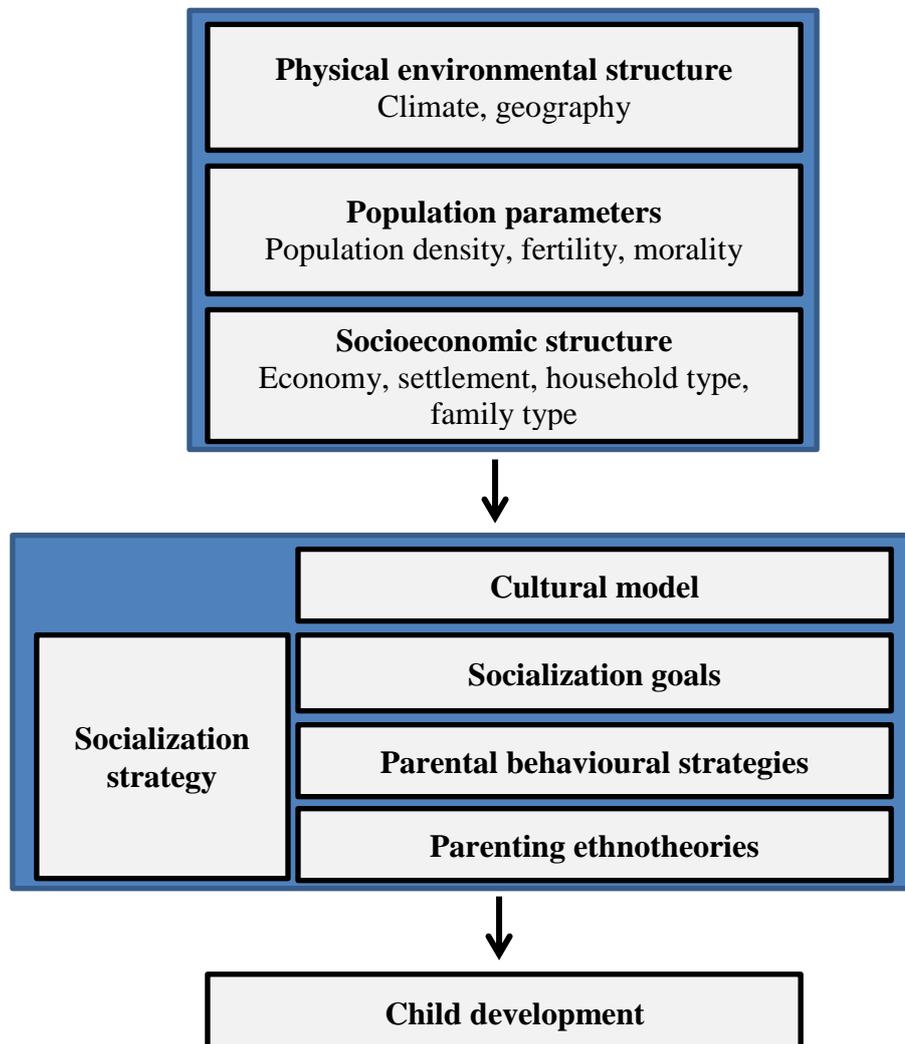


Figure 2. The ecocultural model of development with specified socialization

This model emphasizes the effect that the climate and geography of the area (physical environmental structure), the population density, fertility and mortality rates (population parameters), and the economy, settlement, and household structure (socioeconomic structure) have on the cultural model. Thus, in terms of this model, the physical and topographical context creates opportunities and constraints for the utilization of resources. Because of this, certain types of social structures will develop, especially the prevalence of cooperation and competition (Keller, 2010). These factors determine whether a culture emphasizes independence or interdependence.

The cultural model, in turn, determines the socialization strategies employed by the community. Socialization strategies include socialization goals, parenting ethnotheories and beliefs, and behavioural strategies. All of these aspects affect child development (Keller, 2010).

Socio-cultural contexts differ most commonly according to Western and non-Western cultural orientations, thus representing two extremes with regard to socio-demographic characteristics (Keller, 2007). Although this is a gross generalization, its purpose is to emphasize cross-cultural contrasts between Western and non-Western populations and their environments (Keller, 2007). Developmental pathways that begin during infancy are affected by the cultural context – specifically the cultural orientations – of Western and non-Western societies, as well as by cultural models of independence and interdependence. The cultural model of independence prototypically emphasizes autonomy and separateness. The self is defined as an individual agent who is unique and detached from others. The independent self is adaptive in Western, urban, educated middle-class families (Keller, 2007). The cultural model of interdependence focuses on heteronomy and relatedness. The self is defined as a communal agent who is interconnected and compliant. The interdependent self is adaptive in non-Western, rural families with a lower socioeconomic and educational profile (Keller, 2007). Although the two prototypical cultural models of independence and interdependence constitute unambiguous and pure cultural models, there are also many hybrid cultural models. For example, highly-educated, middle-class families in non-Western societies have been characterized as holding an autonomous-relational cultural model; i.e., they emphasize both autonomy and relatedness in their everyday lives and in their child-rearing strategies. The high degree of formal education and specialized occupations foster autonomy, whereas traditional values and living in extended family systems strengthen duty-based interpersonal relationships (Kagitcibasi, 2007).

The respective cultural models define socialization goals that represent an optimal form of existence within the corresponding environment. Parental ethnotheories translate the socialization goals into ideas guiding actual parenting behaviours, thereby affecting infant development (Keller,

2007; Keller et al., 2006; Super & Harkness, 1996). Parenting practices do not automatically follow attachment theory's ideal pattern, but are rather an adaptation to the socio-cultural environment within which children are raised (Whiting & Whiting, 1975). Different socio-cultural contexts support different parenting practices that are contradictory to attachment theory's ideal. Cultural contexts promote a range of caregiving strategies, extending attachment relationships from the dyadic infant-mother bond to multi-layered bonds between the infant and multiple caregivers (Neckoway, Brownlee, & Castellana, 2007).

2.7 The component model of parenting

Keller (2000; 2007) has formulated a universal conceptualisation of parenting, namely the component model of parenting, which captures universal propensities as well as cultural differences. This model (Keller, Voelker & Yovsi, 2005) proposes that there is a phylogenetically evolved range of parenting systems: namely primary care (nursing/feeding and health-promoting activities), body contact (close physical proximity and carrying), body stimulation (stimulating motor behaviour or massaging), object stimulation (stimulating infants' interest in objects), face-to-face interaction (the exchange of facial communication and eye contact) and vocal stimulation (the exchange of vocal communication). The model hypothesizes that parenting styles are composed of these different parenting systems. For example, the proximal parenting style emphasizes primary care, body contact, and body stimulation; whereas the distal parenting style focuses on verbal exchanges, object play, and face-to-face interaction within the context of exclusive attention. According to Keller, Lohaus et al. (2004), the dominance of certain systems over others can vary across cultural communities. In other words, mothers from various cultural contexts use the same parenting systems and interactional methods when caring for infants but they may emphasize different aspects of these systems and methods over others.

Attachment theory's ideal is represented as a distal strategy of parenting. This 'ideal' style is characteristic for Western urban, middle-class mothers and can be assumed to promote uniqueness and the development of autonomous agency. The contrasting strategy of parenting, the

proximal parenting style, is found in rural, non-Western mothers with low formal education; the focus is on primary care, physical closeness, and body stimulation in the context of shared attention (Keller, 2007). This parenting style is assumed to encourage feelings of belonging and the development of relatedness. Furthermore, according to attachment theory, the distal parenting style is the ideal style as it promotes the cognitive development of infants and prepares them for formal education (Keller, Yovsi et al., 2004). Children become skilled in logical reasoning which is an ability that is favoured in Western, information-based technological societies. However, it has been established that universal developmental tasks are resolved in culture-specific ways (Greenfield, Keller, Fuligni & Maynard, 2003); therefore, children gain specific cultural competencies which are suitable for particular eco-cultural nichés. Nonetheless, attachment theory's definition of competence focuses predominantly on the Western perspective, concentrating on individual accomplishments, school performance and proficiencies in logical reasoning as measured in IQ tests (Van IJzendoorn, Dijkstra, & Bus, 1995). For attachment theory's framework to be universally applicable, a non-Western concept of competence has to be incorporated; for example, social intelligence that is measurable by the responsibility a child assumes (Ogunnaike & Houser, 2002).

Kärtner et al. (2007) noted a distinct pattern in socialization goals that related to culture and its dependence on various socioeconomic variables. Autonomous socialization goals were favoured by mothers from predominantly higher educated middle-class families. However, the interdependent and autonomous-relational samples evaluated the relational socialization goals as more important. Furthermore, the cultural emphases differ not only between the systems, but also within the systems. Keller, Otto, Lamm, Yovsi, and Kärtner (2007) illustrated this in a study of the vocal/verbal communication patterns used in mother-infant communication during the first three months. According to attachment theory, mothers are expected to be responsive to infants' communicative initiatives. This pattern was found in Western (German) dyads that were characterised by an alternating, turn-taking style of communication (Keller, 2007; Keller et al.,

2007). However, non-Western (Cameroonian) dyads were characterised by overlapping vocalisations/verbalisations. This co-action style can be assumed to encourage the experience of synchrony between individuals (Otto, 2008).

According to Neckoway et al. (2007), shared parenting practices employed by African mothers represent an example of a parenting style that might be labelled as insensitive according to attachment theory. African cultures rely on multiple caregiving arrangements and are known for feeding infants on demand and maintaining close proximity with infants (Neckoway et al., 2007). Importance is placed on instant responses to infant cues, a communal system of caring and nurturing, as well as sensitive parenting. The aim is to generate a network of relationships within which communal involvement and responsibilities ensure that the infants are cared for properly. However, insensitive maternal behaviours, as defined by attachment theory, were observed in African infant-mother interactions. For example, maternal insensitivity was used to explain the unusually high proportion of infants classified as disorganized in the study by True et al. (2001). On the other hand, in the African socio-cultural environment, mothers are not expected to be responsive to infants' communicative initiatives. Mothers are expected to know what is best for the baby and to exert responsible control. As a result, good parenting is characterized by parents asserting their dominance by controlling and directing the infant (Keller, 2007). This approach characterizes a responsible parenting style that puts into practice the most fundamental socialization goal, i.e., the infant's obedience and acceptance of responsibility (Otto, 2008).

In short, ethological attachment research is strongly influenced by a Western notion of development. However, culturally-diverse developmental pathways that can be connected to the socio-cultural orientation of Western/non-Western societies and the cultural models of independence/interdependence are distinguishable early in infancy (Greenfield et al., 2003). Therefore, more research focusing on the cultural models of independence and interdependence in non-Western cultural contexts needs to be conducted.

2.8 The present study

This study focuses on the early social experiences of three month old infants from two different cultural contexts. Data collection took place when the infants were three months old because parental socialization strategies, in terms of actual parental practices, can be observed at this age. This is due to the first biobehavioural shift that has taken place (Keller, Gauda, Miranda, & Schölmerich, 1985). The first developmental transition is observable with respect to the formation of primary relationships (Keller, 2002). The age of three months is also regarded as a developmental transition in many parts of the world as expressed in the end of early mother–infant separation periods, naming ceremonies, and the introduction of the baby to the cultural community (Keller, 2002). The structure of the relationship between caregiver and baby at approximately three months of age has been shown to be predictive of later developmental achievements (Keller & Gauda, 1987; Keller, Kärtner, Borke, Yovsi, & Kleis, 2005). The interactional differences that can be observed individually are associated with different developmental consequences, which can be observed at 12 months of age (Keller, Yovsi et al., 2004). At this age, children’s prior social experiences are reflected in the different attachment qualities (secure, insecure, disorganized, and ambivalent). These qualities can be observed in the child’s overt behaviour (Ainsworth et al., 1978), and also on a physiological level (e.g., heart rate or cortisol measurements; see Gunnar, Brodersen, Nachmias, Buss, & Rigatuso, 1996).

2.9 Study aims

The aims of the study are:

1. To examine cross-cultural conceptions of different adaptive and non-adaptive attachment qualities.
2. To explore the ways in which culture-specific norms affect the development of different attachment qualities.
3. To describe indigenous conceptions of parenting practices, socialization strategies, and caregiver strategies based on the early social experiences of infants.

2.10 Study hypotheses

I hypothesise that:

H₁: Caregivers from different cultures will have different conceptions regarding childrearing.

H₂: Local conceptions of caregiving strategies employed by mothers of infants differ across cultural environments.

H₃: Culture-specific norms will affect the development of different attachment qualities.

CHAPTER 3

Methods

3.1 Research design

The study is exploratory as it utilizes a small sample and employs a methodology that has not been used in South Africa. The study is quantitative, descriptive, and cross-sectional.

3.2 Setting

This study focuses on a selection of cultural contexts, including contexts of poverty and adversity, which may represent different socialization strategies. South Africa is a developing country that is characterized by poverty and adversity. Due to apartheid, the Black South African population is disproportionately affected by these conditions of poverty and adversity (Tomlinson, Cooper, & Murray, 2005). This, in turn, affects parenting and child development. Approximately 33% of the population (aged 20 years and older) have completed some secondary schooling. Furthermore, 16.2% of the population are living in informal dwellings (Statistics South Africa, 2012). In addition, a communal concern in communities, such as Khayelitsha on the outskirts of Cape Town, is the high prevalence rates of HIV/AIDS (approximately 10%).

The study was conducted in three neighbourhoods in Khayelitsha and the greater Stellenbosch area, including Somerset West.

3.2.1 Khayelitsha

Khayelitsha is a peri-urban settlement that was established in 1983 (Ndegwa, Horner, & Esau, 2007). As a relatively new settlement, many people in Khayelitsha maintain ties and patterns of circular migration to the Eastern Cape (Ndegwa et al., 2007). According to the Department of Social Development (2006), there are over 400 000 people living in Khayelitsha. Population growth has seen an increase of 23.7% since 2001; therefore it is logical to assume that the number of people living in Khayelitsha will have increased considerably over the last decade (Information

and Knowledge Management Department, 2005). The dominant population is Black African (99.5%) and isiXhosa is the first language (96.5%). Khayelitsha is characterized by a high level of poverty. Difficulties with living conditions – such as housing, basic services, and healthcare – are common. Approximately 51% of the Khayelitsha population were unemployed at the time of the census. Of those that were employed, nearly 80% earned less than R1600 per month (Information and Knowledge Management Department, 2005). As much as 64.6% of the Khayelitsha population live in informal dwellings, 24% of houses have no electricity and 26% do not have access to any sanitation (Information and Knowledge Management Department, 2005).

3.2.2 The greater Stellenbosch area

Stellenbosch and Somerset West were selected as the setting for the middle-class sample. According to a community survey (Statistics South Africa, 2008), there are over 200 000 people living in Stellenbosch. The population groups consist of Black (20.6%), White (22.7%), and Coloured (56.4%) people. Approximately 13% of the Stellenbosch population is unemployed, whilst 26% are not economically active. The latter refers to students, home-makers, pensioners, people unable to work due to illness, and seasonal workers not currently working (IDP and Strategic Programmes Department, 2011). Eight percent of the population lives in informal dwellings, and 2.1% do not have access to any sanitation. Additionally, 87% of the people have access to piped water in their dwelling (Statistics South Africa, 2008).

According to the previous census there are approximately 30 000 people living in Somerset West (Strategic Development Information, 2001). The population groups consist of Black (2.5%), White (83.1%), and Coloured (14.1%) people. Approximately 92% of the Somerset West population is employed and about one per cent lives in informal dwellings. More than 90% of the population has electricity, access to piped water, and sanitation (Strategic Development Information, 2001).

3.3 Participants

Convenience sampling was used for this study because of existing resources in Khayelitsha and Stellenbosch. The total sample comprised 54 mothers and their infants (29 in Khayelitsha and 25 in Stellenbosch and Somerset West). All 29 mothers from Khayelitsha are Black. Of the 25 mothers from the greater Stellenbosch⁴ area, 23 are White and two are Coloured. All mothers were at least 18 years of age. Infants were between 10 and 12 weeks of age. I hypothesized that the Khayelitsha and greater Stellenbosch samples would be representative of two cultural orientations, interdependent and independent respectively. The sample size was determined on the basis of two previous studies (Otto, 2008; Keller, Abels et al., 2005). Otto (2008) was able to determine whether the hypotheses were true based on a sample group of 32 mothers. Keller, Abels et al. (2005) used sample groups consisting of 20 to 24 families which were adequate sizes for determining similar hypotheses. Each of these samples embodied the respective cultural models.

3.4 Procedures

This section provides an overview of the recruitment and data collection procedures.

3.4.1 Recruitment

Recruitment was conducted by using resources in Khayelitsha and the greater Stellenbosch area. In Khayelitsha, neighbourhood women living and working in the communities where part of the study took place, with experience in recruiting, went door to door in three neighbourhoods, namely Mfuleni, Harare, and Site B. They introduced the study to all households, and asked whether there were any mothers with 10 week old infants. When a mother over the age of 18 years with a 10 week old infant was found, she was invited to participate in the study. In the greater Stellenbosch area, a private breastfeeding clinic was approached for contact numbers of mothers with 10 week old infants. This private breastfeeding clinic was contacted in order to recruit middle-class participants living in and around Stellenbosch. Mothers living in Stellenbosch and

⁴ This is not meant to denote that this sample is representative of the greater Stellenbosch area. Stellenbosch includes impoverished areas such as Klapmuts, Kayamandi, and Cloeteville. Throughout this study, the middle-class sample will be referred to as the greater Stellenbosch sample.

Somerset West were contacted telephonically and informed of the study. Mothers that were interested in the study were visited and a more detailed explanation of the study was conducted.

3.4.2 Informed consent

For each participant, a data collector would read aloud the informed consent form (see Appendix A) while the participant (if literate) followed reading silently. At the end of every section of the consent form, the data collector would pause, paraphrase the information they had read, and then ask the participant if she had any questions. At the end of the informed consent form, the data collector would again ask for any questions and answer them. She would then ask the woman a few questions about the procedures explained in the form to confirm her understanding. If the participant could not answer the questions or appeared to be confused, the data collector would review the section again. This process was repeated for each of the questionnaires. All participants were assured that their decision to participate was voluntary. Consent forms were available in English (Appendix A), Afrikaans, and isiXhosa. All participants were given a copy of the consent form for their own records.

3.4.3 Data collection procedures

Upon completion of the informed consent form, participants were asked to complete a **socio-demographic questionnaire** (Appendix B). Thereafter, **spot observations** (Appendices C and D) were carried out. The data collector would enter the home and proceed to set up the camera so that it was focused on the infant. Mothers were instructed to continue with their daily activities and to ignore the data collector for the duration of the video. The camera had to be set up in such a way that the infant and her surroundings could be recorded. The data collector would either hold the camera or set it up on a tripod and remain behind the camera. If the mother would move with the infant, e.g., to another room, then the data collector would follow with the camera. Mothers in the greater Stellenbosch area did not have flexible schedules and this procedure was considered an invasion of privacy. Consequently, it was agreed that the data collector would work around the mother's schedule. This would entail completing two videos on a busy day or six videos on a quiet

day. Mothers in the Khayelitsha sample were not always available when the data collector arrived. Consequently, the data collector would have to return later or the following day to do the observation. Data collectors would usually rotate between three mothers per week; four videos were recorded for each mother per day for five days. Videos had to be spaced throughout the day and could not be recorded directly one after another. This was done so that variability in the mother and infants' activities could be observed. Thereafter, mothers' socialization strategies in terms of belief systems and ethnotheories were assessed with the help of a **picture card interview** (Appendices E – J). This interview was video recorded. Lastly, a **socialization goals questionnaire** (Appendix K) was completed in order to determine which specific socialization goals the mother deemed to be more important. All data were collected from questionnaires and interviews conducted face-to-face in Xhosa and/or English, depending on the participant's preference.

3.4.4 Incentives

Upon completion of the various measures, each mother received a R80 grocery voucher as a token of gratitude for her participation in the study.

3.5 Questionnaires and measurements

The measures used in this study were adapted from Otto (2008), Keller (2003; 2007), Keller, Lohaus et al. (2004), Keller, Abels et al., (2005) and Kärtner et al., (2007).

3.5.1 Socio-demographic Questionnaire

A socio-demographic questionnaire was used to assess the constraints and the resources available to participants from the different settings. An assessment of the socio-ecological context of each participating family was conducted using the socio-demographic questionnaire.

3.5.2 Spot Observations

Spot observations are conducted in order to document the social experiences of the babies in their everyday life. Spot observations entail visiting the home where the infant lives and video

recording the infant in her natural environment. The observer takes a 'mental snapshot' of the activity that is presently taking place when he or she enters the home (LeVine et al., 1994; for a summary see Gross, 1984). Rogoff (1978) described spot observations as a modified time sampling method of observation. Because a 'mental snapshot' does not provide information about the duration of situations, a modified version of the method is used. Not only the spot of the moment is assessed (paper and pencil), but also the following 15 minutes. Twenty spot observations of 15 minutes each are video recorded for every participant. Each 15 minute recording is assessed with a time-based observational scheme (10 seconds of observation, 20 seconds of recording) resulting in five minutes of net observation time (30 assessments) from each unit (Appendix C). During the 15 minutes, defined behavioural codes are assessed. Codes comprise the state of the baby (attentive, sleeping, or crying), the position of the baby, person(s) within reach and sight of the baby, and their behaviours in terms of Keller's component model of parenting (face-to-face, object stimulation, body contact, body stimulation, primary care, and vocal stimulation). A code is applied when the behaviour lasts for at least five seconds during the 10 second interval. The measures for coding are available in Appendix D.

Spot observations should typically be completed over the course of one week due to the rapid developmental progress of infants at that age. Consequently, four videos should be completed per day for five days. The spot observations should begin when the infant is 10 or 11 weeks old and continued until all 20 observations are complete. Researchers should visit the families in their homes to conduct the observations. Should the researchers be unable to get in touch with the family, they would have to return at a later stage or the following day to do the observation. Spot observations have to be completed over an extended period during different times of the day and days of the week in order to ensure that different results reflect variations between populations and not merely random fluctuations in people's activities. Once the 20 spot observations for a family are complete data are coded.

3.5.3 Picture Card Interview

This is a semi-structured interview where mothers are presented with a set of five photographs showing universally occurring mother-infant interactions derived from the component model of parenting (Keller, 2003; Keller, Lohaus et al., 2004). The pictures used in the interviews are selected to represent the presumed cultural ideal of the parental behaviour depicted; i.e., no exaggerated or understated forms of behaviour are selected. A picture of a breast-feeding/bottle-feeding mother is selected to depict primary care (Appendix E); a mother holding her baby represents body contact (Appendix F); a mother pulling her baby to a sitting position or the like is selected for body stimulation (Appendix G); a mother looking at her baby and the baby looking at her represents face-to-face interaction (Appendix H); and a mother interacting with her child with a toy is selected for object stimulation (Appendix I).

Before the interview, the researcher should stress that there are no right or wrong answers and that she is interested in the woman's opinions concerning early childcare in different cultures. The pictures are then presented randomly. The mother is asked to select the one which she feels is most important for small babies and is probed to give reasons for her choice. The interviewer will ask about the kind of behaviour that the mother mentioned; for example, she will be asked to further explain why she considered certain aspects important. From the remaining four, the mother will then be asked to select the second most important one and explain why. This procedure is then repeated for the next two pictures. With the remaining one, she is asked why she thinks that it is the least important. The interview is video recorded and thereafter transcribed. Both the interviewer's and the mother's words are transcribed. The text is translated into English, keeping to the original expressions of the interview as closely as possible. Thereafter the text is coded. The codes refer to the content of the statements with respect to the parenting systems – namely primary care, body contact, body stimulation, object stimulation, face-to-face interaction, vocal stimulation – as well as the interactional mechanisms of positive and negative emotions referred to both infant and mother. In each utterance of the interviewee, the parenting systems and interactional

mechanisms are coded as they are mentioned. If the same category is mentioned several times in one utterance it is coded repeatedly (See Appendix J for coding example).

3.5.4 Socialization Goal Questionnaire

The primary caregiver's socialization strategies are assessed using this measure (Appendix K). The socialization goals questionnaire consists of 28 pairwise comparisons that assess the importance given to autonomy (for example, children should become assertive) and relatedness (for example, children should learn to obey their parents) as socialization goals for the first three years of an infant's life (Keller et al., 2006). These goals are prominent in different cultures. Because giving graded responses on Likert scales is highly unusual in rural settings (Kärtner et al., 2007), the mothers' socialization goals are assessed using a pairwise comparison. There are two sets of four items. One set of items describes autonomy-oriented socialization goals (developing personal talents and interests, learning to express own preferences very clearly, learning to be assertive, and learning that she is different). The other set of items describes relatedness-oriented socialization goals (learning to do what parents say, learning to share with others, learning to maintain social harmony, and learning to respect elderly persons). Each of the eight items is compared with each of the other seven items, one at a time, constituting a total of 28 pairwise comparisons. The order of autonomous and relatedness-oriented goals is counterbalanced across pairs. For each pair, mothers are asked to indicate which of the two goals was more important to them (or whether they were of equal importance) regarding the development of their children. In terms of scoring, a preference for one goal over another is scored by the researcher as +1 for the preferred goal and -1 for the non-preferred goal (e.g., preference for goal A over goal B was scored as +1 for goal A and -1 for goal B). If two goals are rated as equally important, they each received a score of 0 (no difference). Using this procedure, the relative importance of each of the goals was measured as well as the degree to which one goal is more important than another. More importantly, response sets (i.e., respondents who give generally high or low responses on Likert-scaled items) are mostly precluded by this approach because all respondents have the same mean

across items (i.e., 0). Thus, it is easier to compare and interpret the relative importance of each goal across respondents without any statistical adjustment.

3.6 Translation of questionnaires

The entire battery of questionnaires was available in English and Xhosa. The questionnaires were translated into Xhosa by a researcher working in Khayelitsha and then translated back into English by another researcher, as prescribed in the works of Brislin (1970). The two English versions (the original and the translated) were compared. The translator and the back translator met to examine the differences. Mothers were encouraged to answer the interviews in their language of preference. Translations were completed by the principal investigator and researchers in Khayelitsha.

3.7 Data capturing and coding

Data for 54 mothers was captured and coded. Initially 55 mothers agreed to participate in the study. One mother was excluded because she did not complete every measure as she was regularly unavailable.

To code the **spot observations**, the researcher watched each video and recorded the relevant information on a time-based observational sheet. The researcher watched for 10 seconds and recorded what was observed on the coding sheet for the following 20 seconds. This was completed for each video for all 54 participants. Thereafter, the codes were entered into a Microsoft Excel spreadsheet adapted from Keller, Abels et al. (2005). All the scores for parenting categories were calculated as percentages of specific infant states (sleeping, attentive, or crying) using the Excel spreadsheet. The spot observations were analysed using percentages instead of contingent codes because the infant states continued for some time rather than being discrete events. In addition, forms of behaviour were calculated for mothers and averaged for all other persons involved with the infants. This was necessary because in neither of the two samples did any persons (father, grandmother, siblings etc.) other than the mother spend more than 10% of the

observation time with the infant in reach. Any further differentiation according to person was therefore deemed insignificant. As a result, it was possible to compare the state-related parenting types of behaviour that the infants experienced by their mothers and other people.

Once the **picture card interview** for each mother was transcribed and translated, codes were allocated to the different parenting systems and the frequencies were added to form component scores. The word count for each interview was added; thereafter, each component score was divided by the total number of words. This was necessary because the mothers living in the greater Stellenbosch area spoke a great deal more than the mothers living in Khayelitsha. To deal with more convenient numerical values, the scores were multiplied by 1000. Composite scores reflecting either a proximal or a distal style of parenting were constructed. Proximal parenting included the codes for primary care, body contact, and body stimulation. Distal parenting contained the codes for object stimulation, face-to-face interaction, and vocal stimulation. The calculation of the composite scores was conducted by totalling the frequencies of the component codes and controlling for the total number of words spoken by the mother⁵. This is in line with the statistical analysis conducted by Lamm, Keller, and Yovsi (2008).

For the **socialization goals questionnaire**, each of the items was compared to the others. Eight new variables were created: four for autonomy (developing personal talents and interests, learning to express own preferences very clearly, learning to be assertive, learning that she is different) and four for relatedness (learning to do what parents say, learning to share with others, learning to maintain social harmony, learning to respect elderly persons). Thereafter, each item was ranked according to the preference shown for one socialization goal over another; for example, preference for goal A over goal B was scored as +1 for goal A and -1 for goal B. If two goals were rated as equally important, they each received a score of 0 (no difference). Additionally, composite scores reflecting either an orientation towards autonomy or an orientation towards relatedness were constructed.

⁵ Controlling for the words spoken does not refer to regression; it means that the word count was taken into account.

3.8 Ethical approval

Ethical approval for this study was granted by the Health Research Ethics Committee of Stellenbosch University (N11/05/166). All aspects of the study, including the participant recruitment strategy and data collection procedures, were approved by the Health Research Ethics Committee of Stellenbosch University.

3.9 Data analysis

The information from each of the measures (socio-demographic questionnaire, spot observations, picture card interview, and socialization goals questionnaire) was analysed using the Statistical Package for the Social Sciences (SPSS) version 19.0.

Firstly, descriptive statistics of the two sample groups were examined using frequencies and percentages to analyse the socio-demographic characteristics of the samples. An independent samples t-test was conducted in order to determine whether there were significant differences between the socio-demographic characteristics of the two samples. Comparisons were performed using chi-square analyses.

The **spot observations** were analysed according to the methodology outlined by Keller, Abels et al. (2005). The first step of analysis involved an Analysis of Variance (ANOVA) of the cultural groups (Khayelitsha and greater Stellenbosch area) for the following variables: 1) percentage of observation intervals the infant spent within mother's reach, other's reach and within reach of mother and other together during a) sleeping, b) attentive, and c) crying states; 2) percentage of the total number of observation intervals the infant was alone without anybody in view; 3) percentage of crying intervals the infant was nursed; 4) percentage of the total number of observation intervals the infant was in a sleeping state; and 5) percentage of the infant's waking state intervals spent crying. In the second step of analysis, a cultural group x person (mother, other) ANOVA was calculated for the following variables: body contact during a) sleeping, b)

attentive, and c) crying states; object stimulation, face-to-face interaction, caressing, and the categories of body stimulation during attentive states.

For the **picture card interview**, where data were normally distributed (between -1.50 and 1.50 for skewness and kurtosis), an independent samples t-test was used and, when not normally distributed, a Mann-Whitney test was used. The composite scores for proximal and distal parenting styles for the two samples were compared using an independent samples t-test. These scores were compared twice: once where the word count was not taken into account (raw scores) and once where the word count was taken into account (controlled scores). Thereafter, the proximal and distal scores for each sample were compared to each other using a paired samples t-test (Field, 2009). This was conducted to determine which style of parenting was preferred by each sample. Additionally, each component score for the two samples was compared. Primary care, body stimulation, face-to-face interaction, and vocal stimulation were compared using an independent samples t-test. A Mann-Whitney test was used to compare body contact and object stimulation.

The **socialization goals questionnaire** was analysed using an independent samples t-test and a Mann-Whitney test, depending on whether or not the distribution of the data was normal. The mean scores of socialization goals oriented towards autonomy and relatedness of the two sample groups were compared using an independent samples t-test. Thereafter, the individual goals of the two sample groups were compared by conducting an independent samples t-test and a Mann-Whitney test.

3.10 Validity and reliability

The spot observations method was used by Keller, Abels et al. (2005) in Cameroon, India, and Germany. The picture card interview and socialization goals questionnaire have been used in California, Cameroon, India, and Germany (Kärtner et al., 2007; Lamm et al., 2008; Keller et al., 2006). These assessments have not previously been used in South Africa. The principal researcher

and data collectors underwent training conducted by Dr Otto in order to properly conduct these assessments and to ensure validity.

Inter-rater reliability was computed for the spot observations and the picture card interview. The spot observation videos were coded independently by the principle researcher and Dr Otto. Both researchers were trained using spot observation videos from previous studies. Inter-rater reliability was calculated using these videos. The Cronbach's alpha coefficient ranged from .89 to 1.00 for the different variables. The picture card interviews were also coded independently by the principle researcher and Dr Otto. To calculate reliability, 18.5% of all the interviews were rated by both coders. Cronbach's alpha coefficient for primary care, body contact, body stimulation, object stimulation, and vocal stimulation ranged from .87 to .99. Face-to-face interaction had a Cronbach's alpha coefficient of .51. The Cronbach's alpha coefficient for the proximal and distal variables was .99 and .92 respectively. Table 1 presents the results for the reliability of the picture card interview.

Table 1

Inter-rater Reliability for Picture Card Interview

Parenting system	Cronbach's alpha	Composite Cronbach's alpha
Primary care	.99	
Body contact	.89	
Body stimulation	.87	.99
Object stimulation	.94	
Vocal stimulation	.89	
Face-to-face interaction	.51	.92

CHAPTER 4

Results

4.1 Introduction

The results are presented in five sections: (1) socio-demographic characteristics; (2) spot observations; (3) picture card interview; (4) socialization goals; and (5) summary of findings.

4.2 Socio-demographic characteristics

The study comprised two sample groups, namely the Khayelitsha sample (29 mothers) and the greater Stellenbosch area sample (25 mothers). Tables 2 and 3 provide a detailed summary of the socio-demographic characteristics of the two samples. There was a significant difference in age between the two samples, the Khayelitsha mothers were, on average younger, than the mothers from the greater Stellenbosch area. The mean age of the Khayelitsha mothers was 27.79 years whereas the mean age of the greater Stellenbosch mothers was 31.60 years. The average level of education was significantly different between the two samples. On average, the Khayelitsha sample had completed nine years of schooling. All the greater Stellenbosch mothers had completed 12 years of schooling and 84% had engaged in further tertiary education. Furthermore, there were significantly more people living in each household in Khayelitsha than in the greater Stellenbosch area.

Table 2

Socio-Demographic Characteristics of the Two Sample Groups

	Khayelitsha (n=29)	Greater Stellenbosch (n=25)	<i>t</i>	<i>p</i>
	Mean (SD)	Mean (SD)		
Mother's age	27.79 (6.15)	31.60 (4.53)	-2.55	.014*
Mother's years of education	9.28 (3.50)	12.84 (0.37)	-5.05	.000*
Number of persons per household	5.86 (2.03)	3.76 (0.78)	4.87	.000*

* $p < .05$

More than half (55.17%) of the Khayelitsha sample reported having no income, which was significantly different to the greater Stellenbosch mothers, as 88% reported an income of over R3000 per month. There was a significant difference in marital status between the two samples. Of the 29 Khayelitsha mothers, just over half were married or cohabiting with a partner, and the remainder were single. Ninety-two percent of the greater Stellenbosch mothers were married. There was a significant difference with regard to housing between the two samples. Approximately two-thirds of the Khayelitsha mothers were living in informal housing and the remainder lived in houses. Over 90% of the greater Stellenbosch mothers lived in formal housing.

Table 3

Comparison of Frequencies of Socio-Demographic Characteristics

	Khayelitsha (n=29)	Greater Stellenbosch (n=25)	<i>p</i>
	Frequency	Frequency	
Mother's income			
No income	16	2	
R1 – R1000	10	1	
R1001 – R3000	3	0	
More than R3000	0	22	.000*
Mother's marital status			
Single	13	0	
Married/Cohabitation	15	24	
Divorced	1	1	.000*
Type of house			
Shack	18	0	
Flat	0	2	
House	11	23	.000*

* $p < .05$ **4.3 Spot observations**

The results for the spot observations illustrate which caregiving arrangement (exclusive or multiple) is preferred by the two samples. Table 4 presents comparisons between the two samples with respect to the caregiving arrangement and the state of the infant (i.e., attentive, sleeping, crying). Tables 5 and 6 present the results for the amount of time spent on different caregiving activities with the mother or the other, respectively.

The mean percentages and standard deviations of the state of the infant whilst in proximity of the mother, other, or both of observed time intervals were calculated for both sample groups in Table 4. On average, the mothers from the greater Stellenbosch area spent more time exclusively with their baby ($M=52.45$) than the mothers from Khayelitsha ($M=38.99$). However, only attentive

and crying states were significantly different between the samples. On average, the Khayelitsha infants spent more time within reach of other people ($M=13.23$) than the greater Stellenbosch infants ($M=6.76$). There was a significant difference between the samples for the attentive and sleeping states. Although the Khayelitsha infants spent more time than the greater Stellenbosch infants within reach of the mother and others together, the difference was not significant. The Khayelitsha infants spent more time alone (nobody within reach/view), more time sleeping, and more time crying than the greater Stellenbosch infants, but this was not significant. Additionally, the results confirm that the mothers were the most prominent caregivers for the infants in both samples. The percentage of time infants were within reach of their mothers was considerably higher than that for other persons.

Table 4

A Comparison of the Caregiving Arrangements

Caregiving arrangement	Khayelitsha	Greater Stellenbosch	F	df	p
	Mean (SD)	Mean (SD)			
Infant in reach of mother exclusively					
Infant attentive	51.92 (16.43)	68.41 (20.83)	10.56	52	.002*
Infant sleeps	17.35 (17.71)	26.04 (29.10)	1.69	52	.201
Infant cries	47.71 (17.90)	62.91 (29.24)	5.10	52	.030*
Infant in reach of other exclusively					
Infant attentive	13.71 (12.62)	6.34 (10.39)	5.38	52	.024*
Infant sleeps	11.65 (14.54)	3.21 (8.91)	6.81	52	.012*
Infant cries	14.33 (15.98)	10.72 (18.77)	0.58	52	.448
Infant in reach of mother and other together					
Infant attentive	11.99 (9.17)	11.53 (15.12)	0.02	52	.890
Infant sleeps	3.71 (5.08)	1.89 (3.89)	2.14	52	.150
Infant cries	10.87 (12.01)	7.38 (10.90)	1.23	52	.272
Infant without anybody in view	37.40 (15.76)	30.94 (12.68)	2.69	52	.107
Infant cries (% of waking time)	10.95 (5.83)	9.73 (4.89)	0.69	52	.411
Crying infant and nursed	8.55 (9.77)	5.81 (7.35)	1.32	52	.256
Infant sleeping (% of total time)	33.83 (11.00)	29.51 (13.15)	1.73	52	.195

* $p < .05$

Table 5 presents the results for the average amount of time the mother spent with the infant during different caregiving activities. The different caregiving activities include body contact, caressing, face-to-face interaction, eye contact, talking, vestibular stimulation, and object stimulation. On average, the greater Stellenbosch infants experienced more body contact with the mother than the Khayelitsha infants. Furthermore, the greater Stellenbosch infants experienced significantly more caressing, eye contact, talking, and object stimulation from the mother than the

Khayelitsha infants. Although the greater Stellenbosch infants experienced more face-to-face interaction and vestibular stimulation, there were no significant differences between the two samples.

Table 5

Mean Percentages of Time Mother Invested into Caregiving Activities

Activity	Khayelitsha	Greater Stellenbosch	F	df	p
	Mean (SD)	Mean (SD)			
Body Contact					
Infant attentive	67.51 (19.13)	77.35 (24.10)	2.80	52	.101
Infant sleeps	55.92 (42.19)	59.73 (46.07)	0.10	52	.752
Infant cries	64.41 (30.53)	74.91 (31.09)	1.56	52	.217
Caressing	51.38 (40.38)	82.02 (25.17)	11.50	52	.001*
Face-to-face	71.63 (20.84)	79.99 (21.78)	2.07	52	.156
Eye contact	60.98 (37.38)	82.89 (28.36)	5.78	52	.020*
Talking	50.82 (23.06)	78.60 (23.70)	18.96	52	.000*
Vestibular stimulation	69.84 (28.96)	73.53 (35.08)	0.18	52	.674
Object stimulation	17.85 (29.47)	66.03 (37.84)	27.62	52	.000*

* $p < .05$

Table 6 presents the results for the average amount of time other people spent with the infant during different caregiving activities. On average, the Khayelitsha infants experienced more body contact with other people than did the greater Stellenbosch infants. However, the only state that approached significance was when the infant was attentive. Additionally, the Khayelitsha infants experienced more caressing from other people than the greater Stellenbosch infants. This difference approached significance. The Khayelitsha infants experienced significantly more talking whilst other people were present. Although the Khayelitsha infants experienced more face-to-face interaction, eye contact, and object stimulation, there were no significant differences between the two samples.

Table 6

Mean Percentages of Time Others Invested into Caregiving Activities

Activity	Khayelitsha	Greater Stellenbosch	F	df	p
	Mean (SD)	Mean (SD)			
Body Contact					
Infant attentive	15.31 (17.89)	7.73 (13.20)	3.06	52	.086
Infant sleeps	14.83 (31.36)	5.93 (16.70)	1.76	52	.192
Infant cries	14.17 (21.33)	11.75 (21.20)	0.17	52	.679
Caressing	13.60 (23.27)	4.195 (12.32)	3.58	52	.065
Face-to-face	13.79 (17.74)	7.01 (10.67)	2.78	52	.102
Eye contact	10.31 (22.00)	4.44 (14.15)	1.40	52	.243
Talking	19.49 (15.33)	4.82 (8.10)	20.06	52	.000*
Vestibular stimulation	10.56 (18.58)	14.51 (30.24)	0.32	52	.574
Object stimulation	8.95 (23.79)	5.37 (20.33)	0.35	52	.558

* $p < .05$ **4.4 Picture Card Interview**

The results for the picture card interview illustrate which style of parenting (proximal or distal) is preferred by the two samples. Table 7 presents the comparison of the proximal and distal parenting styles between the two samples where the word count was not controlled⁶. The greater Stellenbosch sample scored significantly higher than the Khayelitsha sample for both proximal and distal parenting.

⁶ Controlling for the words spoken does not refer to regression; it means that the word count was taken into account.

Table 7

Comparison of Raw Proximal and Distal Scores

Parenting style	Khayelitsha	Greater Stellenbosch	<i>t</i>	<i>df</i>	<i>p</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)			
Raw proximal composite score	5.17 (2.05)	11.20 (4.90)	-5.73	52	.000*
Raw distal composite score	3.00 (1.31)	6.12 (3.87)	-3.85	52	.000*

* $p < .05$

Table 8 illustrates the comparison where the word count was controlled. The Khayelitsha sample scored significantly higher than the greater Stellenbosch sample for both proximal and distal parenting styles.

Table 8

Comparison of Controlled Proximal and Distal Scores

Parenting style	Khayelitsha	Greater Stellenbosch	<i>t</i>	<i>df</i>	<i>p</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)			
Proximal composite score	63.41 (15.87)	49.51 (17.53)	3.06	52	.004*
Distal composite score	40.17 (23.24)	26.88 (13.89)	2.50	52	.016*

* $p < .05$

Table 9 presents the comparison of the proximal and distal parenting styles within each sample. There was a significant difference between the two styles of parenting within each sample. Both the Khayelitsha and the greater Stellenbosch sample showed a preference for the proximal parenting style.

Table 9

Comparison of Parenting Styles within Each Sample

Parenting style	Proximal composite score	Distal composite score	<i>t</i>	<i>df</i>	<i>p</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)			
Khayelitsha	63.41 (15.87)	40.17 (23.24)	-4.59	28	.000*
Greater Stellenbosch	49.51 (17.53)	26.88 (13.89)	-5.15	24	.000*

* $p < .05$

Table 10 provides the results for the comparison of each of the parenting components between the two samples. The Khayelitsha sample scored higher than the greater Stellenbosch sample for each component. There was a significant difference for primary care, object stimulation, and vocal stimulation. There was no significant difference for body contact, body stimulation, and face-to-face interaction.

Table 10

Comparisons of Parenting Components

Parenting style	Khayelitsha	Greater Stellenbosch	<i>t</i>	U	<i>df</i>	<i>p</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)				
Primary care	28.03 (13.71)	18.71 (11.52)	2.68		52	.010*
Body contact	17.40 (11.85)	13.42 (9.41)		285.5		.184
Body stimulation	17.98 (12.33)	17.38 (11.37)	0.18		52	.855
Face-to-face	14.36 (11.01)	12.98 (10.30)	0.48		52	.636
Object stimulation	16.81 (11.64)	11.31 (9.58)		231.0		.017*
Vocal stimulation	8.99 (12.56)	2.59 (4.34)	2.57		52	.014*

Note. * $p < .05$. U = Mann-Whitney score.

4.5 Socialization goals questionnaire

The comparisons of the autonomous and relatedness composite scores are presented in Table 11. There was a significant difference between the two samples for both autonomy and

relatedness. On average, the greater Stellenbosch sample favoured socialization goals oriented towards autonomy significantly more than the Khayelitsha sample. Furthermore, the Khayelitsha sample favoured socialization goals oriented towards relatedness significantly more than the greater Stellenbosch sample.

Table 11

Comparison of the Autonomous and Relatedness Composite Scores

Orientation	Khayelitsha	Greater Stellenbosch	<i>t</i>	<i>df</i>	<i>p</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)			
Autonomous composite score	-1.23 (1.37)	-.10 (1.47)	-2.93	52	.005*
Relatedness composite score	1.23 (1.37)	.10 (1.47)	-2.93	52	.005*

* $p < .05$

Table 12 presents the results for the comparisons of each socialization goal between the samples. There was no significant difference for the following socialization goals: learn to share with others, learn to do what parents say, learn to be assertive, and develop personal talent and interest. There was no significant difference for 'learn to respect elderly persons', however this variable approached significance. The Khayelitsha sample favoured two socialization goals, namely 'learn to maintain social harmony' and 'learn to express own preferences clearly', significantly more than the greater Stellenbosch sample. The greater Stellenbosch sample favoured one socialization goal, 'learn that she is different from others', significantly more than the Khayelitsha sample.

Table 12

Comparison of Each of the Socialization Goals

Socialization goal	Khayelitsha	Greater Stellenbosch	<i>t</i>	U	<i>df</i>	<i>p</i>
	Mean (<i>SD</i>)	Mean (<i>SD</i>)				
Learn to share with others	1.10 (2.99)	1.76 (3.44)	-0.75		52	.457
Learn to do what parents say	1.03 (3.04)	-0.48 (3.92)	1.60		52	.116
Learn to maintain social harmony	0.83 (2.39)	-1.08 (3.74)	2.26		52	.028*
Learn to respect elderly persons	1.97 (3.01)	0.20 (3.79)	1.91		52	.062
Learn the she is different from others	-4.72 (3.38)	0.84 (3.40)		92.0		.000*
Learn to express own preferences clearly	0.14 (3.23)	-1.60 (2.97)	2.05		52	.046*
Learn to be assertive	-0.79 (3.22)	-1.08 (3.84)	0.30		52	.766
Develop personal talents and interest	0.45 (3.29)	1.44 (2.53)	0.12		52	.226

Note. * $p < .05$. *U* = Mann-Whitney score.

4.6 Summary of findings

The socio-demographics for the greater Stellenbosch and Khayelitsha samples were significantly different in terms of mother's age, education profile, number of household members, type of housing, marital status, and monthly income. The results for the spot observations confirm that the infants in the Khayelitsha sample experience a multiple care arrangement as compared to the exclusive care arrangement of the greater Stellenbosch sample. Additionally, the greater Stellenbosch infants experienced significantly more caressing, eye contact, object stimulation, and talking from the mother than the Khayelitsha infants. However, the Khayelitsha infants experienced significantly more talking from others than the greater Stellenbosch infants. The results for the picture card interview show that both samples prefer proximal parenting over distal

parenting. Furthermore, there was a significant difference between the two samples for primary care, object stimulation, and vocal stimulation. The Khayelitsha sample scored higher for these components. The results for the socialization goals questionnaire illustrate that the greater Stellenbosch sample favours autonomy, whereas the Khayelitsha sample prefers relatedness. The Khayelitsha sample favoured 'learn to maintain social harmony' and 'learn to express own preferences clearly' socialization goals, whereas the greater Stellenbosch sample scored higher for 'learn that she is different from others'.

CHAPTER 5

Discussion

5.1 Introduction

This study investigated the early social experiences of three month old infants in two different cultural environments. Socio-demographic characteristics, parenting ethnotheories, caregiving strategies, and socialization goals were examined in order to determine whether there were differences across cultural settings. This chapter provides a discussion of the relevant findings, study limitations, and directions for future research.

5.2 Socio-demographic characteristics

Several studies have reported that non-Western families living in a rural environment with a low formal education and monthly salary are oriented towards an interdependent cultural model (Kärtner et al., 2007; Keller, Abels et al., 2005; Keller, Kärtner et al., 2005). Based on this definition and the Keller model, the Khayelitsha sample was selected on the basis that it might be representative of the interdependent model. The average level of education completed by the Khayelitsha sample was nine years of schooling. More than half of the mothers reported having no income and the majority lived in informal dwellings. These characteristics are similar to those of the ethnic tribe of Cameroonian Nso and Indian Gujarati villagers, both of which were classified as representing the cultural model of interdependence in the Keller model (Keller et al., 2009).

According to Kärtner et al. (2007), urban, educated middle-class families living in a Western society are oriented towards an independent cultural model. All the mothers from the greater Stellenbosch sample live in formal dwellings, completed high school, and the majority earns more than R3000 per month. Once again, these characteristics are similar to samples from previous studies that represent the independent cultural model such as German and Greek middle-class families (Keller et al., 2009). These socio-demographic characteristics would, in the Keller model, be representative of an independent model.

5.3 The influence of culture on caregiving arrangements

It was hypothesized that the Khayelitsha mothers would employ a multiple caregiving arrangement while the greater Stellenbosch mothers would employ an exclusive arrangement. The results from the spot observations confirm this hypothesis. The infants in Khayelitsha were cared for by different people for significantly longer periods of time than in the greater Stellenbosch sample. This may be because they represent an interdependent cultural model. Another possible reason could be due to the number of people in the vicinity available to care for the child. In this sample and in the greater Khayelitsha, the majority of dwellings are small and extremely close to one another (Tomlinson et al., 2005). Most of the dwellings in the sample were informal with five to six people living in each. Owing to the limited space, it could be argued that there are fewer opportunities for exclusive infant care. Additionally, the majority of the people in the sample, as well as the cohabitants, were unemployed. Greater caregiver responsibilities might be enabled due to more time being available. In a context such as this, the mother is able to share the responsibility of child care with available caregivers. Another possible explanation for an interdependent caregiving arrangement could be the Xhosa notion of 'Ubuntu', where community cohesion and empathy for others are considered essential (Tomlinson et al., 2005). In spite of adversity and poverty, there is compassion for neighbours and the community. Infants are seen as belonging, to a degree, to the community, making their safety and welfare a mutual concern. This collective nature of the Xhosa culture, combined with high density living and unemployment, might explain the interdependent model.

The greater Stellenbosch infants were nearly always exclusively within their mothers' reach, which is indicative of an exclusive caregiving arrangement in the Keller model (Keller, Abels et al., 2005). The spot observations revealed that the greater Stellenbosch infants were rarely left in the care of other people. All of the mothers live in formal housing with an average of three to four people per household. The other household members typically consisted of another child and the children's father. All the fathers were employed and unavailable during the day to care for

the infant. Employment, combined with formal housing, may afford the families in the greater Stellenbosch area more privacy and independence which readily enables them to incorporate an exclusive care arrangement.

However, the majority of the greater Stellenbosch mothers were on maternity leave and planning on returning to work when the infant reached four months old. According to the Basic Conditions of the Employment Act (The South African Department of Labour, 2013), pregnant employees are entitled to four consecutive months of maternity leave. The majority of the greater Stellenbosch mothers chose to return to work to provide more financial support for the family. Many of the greater Stellenbosch infants were going to be placed in crèches or in the care of nannies. Because of this, it is likely that the mother will no longer be the sole primary caregiver. Other caregivers may focus on other caregiving strategies which could have implications for the results of this study. Similarly, in other countries, such as Spain and France, the duration of parental leave can be extended to 36 months (Bruning & Plantenga, 1999). Different caregiving arrangements and caregiving strategies may be incorporated due to the duration of parental leave.

The differences in socio-demographic characteristics (such as income and household structure) between the two samples are significant and one could argue that it is specifically these differences, and not culture, that shape the way parents raise their children. However, we cannot ascribe all child-rearing differences to socio-economic differences, nor can we attribute all child-rearing differences to culture. According to Keller et al. (2009), parenting strategies are related to the socio-demographic profile of particular contexts which, in turn, is related to that particular society's culture. Furthermore, according to the ecocultural model of development (Keller, 2007), socio-economic structures, namely economy, settlement, and household structure, affect the cultural model of a group. In other words, along with the physical environmental structure and population parameters, income and household structure influence the cultural model. According to Kärtner et al., (2007), culture is dependent on, as well as defined by, socioeconomic variables. The

socio-economic variables of the two samples suggest that they will belong to different cultural models and will employ dissimilar caregiving strategies and focus on different socialization goals.

5.4 Differences in socialization goals and parenting styles

5.4.1 Khayelitsha: The interdependent cultural model

It was hypothesized that the Khayelitsha mothers would prefer relational socialization goals and a proximal parenting style. The proximal style focuses on primary care, body contact, and body stimulation more than face-to-face interaction, object stimulation, and vocal stimulation. The results confirmed this hypothesis. This is a distinct pattern found in interdependent cultures, such as rural Cameroonian Nso mothers and Indian Rajput villagers (Kärtner et al., 2008; Keller, 2003). Khayelitsha mothers favoured a proximal parenting style to a greater degree than the greater Stellenbosch mothers. However, contrary to the expectations outlined in the hypotheses, they also emphasized face-to-face interaction, object stimulation, and vocal stimulation to a larger extent than the greater Stellenbosch mothers during the picture card interview.

This could be attributed, in part, to the relative lack of words spoken during the picture card interview by the Khayelitsha mothers. The amount of words spoken for each parenting system was divided by the total number of words spoken during the interview and multiplied by 1000. This was in line with Lamm et al. (2008). Because the Khayelitsha mothers spoke very little throughout the interview, the score for each parenting system was very high. The Khayelitsha mothers did not discuss the pictures like the greater Stellenbosch mothers did, in spite of being instructed and encouraged to do so. Keller, Kärtner et al. (2005), had similar findings when administering the picture card interview with German mothers and Cameroonian Nso mothers. The German mothers spoke significantly more during the interview than the Cameroonian Nso mothers. Because of this the amount of words spoken are taken into account for statistical analysis. According to Keller, Kärtner et al. (2005), there are distinct cultural differences in narrating styles; individuals with a more independent orientation produce more voluminous narrations than individuals with a more interdependent orientation. Individuals with a higher level of education tend to elaborate more (as

expressed in a larger volume), than individuals from lower socioeconomic backgrounds who produce more of a low elaborative style (Keller, Voelker et al., 2005).

5.4.2 Greater Stellenbosch: The independent cultural model

It was hypothesized that the greater Stellenbosch mothers would favour autonomous socialization goals and a distal parenting style representative of an independent cultural model. The results partly confirmed this hypothesis. The greater Stellenbosch mothers favoured autonomous socialization goals but, according to the picture card interview, they also favoured a proximal parenting style.

The results for the spot observations contradict those of the picture card interview. The greater Stellenbosch mothers employed vocal stimulation, face-to-face interaction, and object stimulation more than the Khayelitsha mothers during the spot observations. The greater Stellenbosch infants experienced significantly more talking, eye contact, and object stimulation than the Khayelitsha infants within the context of exclusive attention. This is in line with the distal style of parenting (Keller, Yovsi et al., 2004). According to Keller, Hentschel et al. (2004), mothers from independent cultures communicate with the infant as a quasi-equal interactional partner whose needs, wishes, and preferences are important. This could explain why the greater Stellenbosch mothers spoke significantly more than the Khayelitsha sample. Alternatively, because the Khayelitsha mothers employed a proximal parenting style, they might not regard conversing with an infant as a critical part of development. Instead it could be hypothesised that the emphasis is placed on body contact and body stimulation.

Distal parenting emphasizes face-to-face interaction because it provides an opportunity for mutuality between the parents and the infant. Because the infant's observing behaviour controls the onset and offset of mutual eye contact, it symbolizes the first communicative system where the infant can exercise control over an interactional exchange (Keller, Schölmerich, & Eibl-Eibesfeldt, 1988; Keller, Yovsi et al., 2004). Keller, Lohaus, Völker, Cappenberg and Chasiotis, (1999), found that

when there is eye contact between parent and infant, parents are inclined to respond within a very short interval (less than one second) to infant signals. During this time range, infants are able to detect contingencies. The parents' reactions influence the infant's information processing capabilities, leading the infant to experience causality. This allows infants to relate the behavioural reaction of the parent to their own behaviour, thus emphasizing the sense of autonomy and the understanding of being a distinct and separate person. Face-to-face interaction (with the experience of causality) and a cultural climate that promotes autonomy may lead to an independent and competitive self (Keller et al., 1999). These are characteristics that are valued by families that belong to an independent cultural model, for example Western countries such as Germany.

The prominent role of object stimulation also supports the development of an autonomous and independent self. Objects and toys direct the attention of the infant to the physical world and initiate interest and investigation. The emphasis on exploration has been related to an independent sociocultural orientation (Rothbaum et al., 2000). Objects and toys are also considered as supporting separateness and the infant's ability to spend time alone and interact with the external world (Keller, Abels et al., 2005). Keller, Voelker et al. (2005) found that German mothers focused on object stimulation with the infant from a young age because it supported autonomy and cognitive development.

5.5 Contextualizing development: The ecocultural model of development

In summary, the differences between the two samples support the hypotheses, with one exception. As hypothesized, the Khayelitsha mothers favoured a multiple care arrangement, relational socialization goals, and the proximal parenting style. The greater Stellenbosch mothers favoured an exclusive care arrangement and autonomous socialization goals. Contrary to my expectations, they also favoured the proximal parenting style. However, the results from the spot observations and previous studies provide sufficient evidence to support the hypothesis that the greater Stellenbosch mothers represent an independent cultural model. Employing different caregiving strategies could mean that the Khayelitsha sample and the greater Stellenbosch sample have different caregiving

beliefs. Although not part of this study, underlying beliefs and conceptualisations about infant and child development should be examined in order to provide greater clarity about why particular parenting styles and socialization goals might be focused on more than others.

The Whiting model for psychocultural research conceptualizes the environment as the foundation of a causal chain leading to child-rearing practices (Keller & Otto, 2010). Keller's ecocultural model of development provides an adaptation of this by illustrating the interrelatedness of ecological and socio-cultural conditions, socialization strategies, and the developmental consequences (Otto, 2008). According to the ecocultural model, parenting systems and behaviours are universal but the cultural environment determines which systems/behaviours are emphasized more. In this regard, parenting styles and the related beliefs are culture specific and have evolved as adaptations to specific ecocultural environments (Kärtner, Holodynski, & Wörmann, 2013). Furthermore, irrespective of the cultural context, people have a need to relate to others as well as a need for independence. According to Keller (2007), these needs are important in all cultures yet they may manifest differently depending on the cultural context. The model of interdependence (relatedness) and the model of independence (autonomy) are prototypes. Not all cultures and their associated cultural models can or should be categorized as such. Rather, there are other cultural models beyond these two that incorporate different aspects of the prototypes to different degrees, for example the autonomous-relational model (Kärtner et al., 2013). With this in mind, one could argue that classifying South Africa, a highly diverse country, as being representative of a single model of interdependence/independence is problematic. We should acknowledge that different cultural models exist in close proximity to one another. Similar results were found when the parenting styles and socialization goals of urban and rural Cameroonian Nso mothers were compared (Kärtner et al., 2008). The results from this study and others provide further support for the re-conceptualization of caregiving as an evolved universal developmental task that has to be solved in a contextual and culturally sensitive manner in order to have adaptive value.

5.6 Implications of findings for attachment theory

Attachment has been placed at the centre of human development, emphasizing that socio-emotional development is fundamental to all developmental domains (Keller, 2002). The basic tenet of attachment theory is that an infant's physical and emotional wellbeing is dependent on a warm, intimate, and continuous relationship formed with her mother or primary caregiver (Ainsworth et al., 1974; Baer & Martinez, 2006; Bowlby, 1982). Bowlby (1982) acknowledged that the environment plays a role in the development of the mother-child relationship; however, ethological attachment research has concentrated on the independent model of Western middle-class families (Otto, 2008). The differential influence of socio-cultural environments on attachment relationships has been neglected (Hrdy, 1999).

There are numerous assessments that measure attachment relationships; however; the two most prominent procedures are the SSP and the AQS. The SSP has been used to examine qualities of attachment in various diverse cultural contexts using a fixed coding system. My findings suggest that a culturally-valid assessment of attachment should utilize an approach that includes an analysis of socio-ecologic and socio-demographic parameters, explore parenting ethnotheories, and use an everyday situation to provoke behavioural responses to stress. This should be employed in addition, perhaps, to a structured laboratory task. Using a simulated standardized situation and a predetermined coding system in contexts that differ from the environment from which the method was initially derived may not be appropriate. Moreover, the SSP focuses exclusively on the infant and, to a large degree, ignores differences in maternal behaviour.

It is not sufficient to only assess attachment in terms of secure and insecure. We should incorporate a combined approach where we also view each culture as having a system of child-rearing beliefs and strategies that are reflected in the parenting styles employed by the parents. Furthermore, these parenting styles and systems are strongly connected to cultural context and type of cultural model. It is necessary to acknowledge that culture is more than an independent variable that causes distributional differences (Keller, 2007). Although attachment between infants and their caregivers is

universal, we need to understand that it might look different and have different developmental trajectories across cultural environments.

5.7 Strengths and limitations

This study is the first to investigate the early social experiences of three month old infants in two different cultural environments in South Africa using the Keller methodology (2000). This study focused on two very different communities existing in close proximity to each other. It provided insight into the lives and child-rearing strategies of mothers from an impoverished community and a middle-class community. The spot observations provided naturalistic observations of mothers interacting with their children and their daily routines. An established methodology was followed and the inter-rater reliability was high. These strengths are in line with other studies that have compared different cultural groups, i.e., Kärtner et al. (2007) and Keller et al. (2006).

This study had several limitations. Firstly, on average, the standard deviation values for the spot observations and picture card interview were large. This indicates that the mean may not be an accurate representation of the data (Field, 2009). The inter-rater reliability for face-to-face interaction was lower than what is regarded as acceptable with a Cronbach's alpha of .51 (Field, 2009). However, the Cronbach's alpha coefficients for the other parenting systems and the combined parenting styles were high. In spite of extensive training of the data collectors, the reliability of face-to-face interaction was low and thus could be a limitation of the picture card interview methodology.

The small sample size and sampling method is a limitation. However, as mentioned, the sample size was based on two previous studies (Otto, 2008; Keller, Abels et al., 2005). Studies on attachment that use observational techniques in adverse environments and simultaneously collect data about mothers' belief systems have reported comparable small sample sizes. Van den Boom, Broekema, Leonard, and Kellenaers (1987) observed 39 mother-infant pairs in the Netherlands.

Sagi and Lewkowicz (1987) reported on 36 Israeli mother-infant pairs. Schneider-Rosen and Cicchetti (1984) provided results for 37 US mother-infant pairs. True et al. (2001) investigated attachment in 42 mother-infant pairs from Mali (Otto, 2008). Nevertheless, future studies should increase the sample size. Furthermore, this was a convenience sample. In order to ensure the ability to generalize, a more representative sampling technique should be utilised in future studies.

The method is time consuming for participants and some participants might have experienced the data collection as intrusive. This is borne out by the fact that over 100 potential participants refused to participate. Of those that did consent to participate in the study, very few were willing to be observed during weekends. In addition, weekend observations were not possible in Khayelitsha due to the unavailability of the data collectors. Ideally, spot observations should capture the infant's natural environment which should include weekends. The potential participants who did not want to participate were predominantly from the greater Stellenbosch area. The Khayelitsha mothers rarely turned down the opportunity to participate. This could be due to the incentive or the interdependent and social nature of the community. One could argue that the mothers that agree to participate in this specific study are typically more social and value relational qualities, i.e., maintaining social harmony and sharing with others, than mothers who choose not to participate. This could explain why the greater Stellenbosch sample appeared to favour proximal and distal parenting styles.

Another limitation may lie in the fact that the spot observations were video-recorded. The camera might have affected the natural behaviour of mothers because they were aware of it. However, based on experience this appears unlikely. Once the mothers were comfortable, they appeared to forget about the camera and continued with their activities. Because it was not a once-off observation but 20 observations it made it difficult to deviate from one's natural routine. Furthermore, if mothers' behaviours were affected by the video recording, this may in itself provide valuable information. For example, mothers may have deliberately displayed a behaviour they consider to be appropriate parental behaviour, allowing us to observe what they consider to be

a good response to a child's signal. Compared to studies on attachment that take place in artificial laboratory settings, where a child's response possibilities are severely restricted, the video recording of mother-infant pairs in their homes is more naturalistic. However, the limited space in the informal houses may have been a limitation. Because of limited space, it was challenging at times to record the infant and all the surroundings as it was difficult to fit the entire room into the camera frame. This may have affected the scores for whether mother, other, and both were within reach/view. At times there was also talking but coding was difficult as no one was in the frame.

The amount of words spoken during the picture card interview may be a limitation (see previous discussion). This may present a distorted representation of the parenting styles and components favoured by the different samples. This could be a limitation of the picture card interview which needs to be explored in future studies.

Lastly, the study measured caregiving strategies and their behavioural manifestations. However, the underlying caregiving beliefs were not addressed. Mothers were not asked to motivate their actions. Without an active exploration of this, child-rearing strategies may be concluded to be a response to poverty, limited education, and small dwellings as opposed to being a combination of these socio-demographic variables and underlying cultural beliefs and attitudes.

5.8 Directions for future research

Further research using the Keller methodology (2000) is needed to examine the cross-cultural conceptions of different adaptive and non-adaptive attachment qualities in South Africa. Studies should be conducted in peri-urban settlements similar to that of Khayelitsha, i.e., Kayamandi, Klapmuts, and rural areas such as those in the Eastern Cape. This will provide a better understanding of the extent to which socio-demographic and geographic variables may account for much of what is now being interpreted as part of a cultural model.

Further research using the picture card interview and socialization goals questionnaire is needed and could be quite easily administered. Each of these measures requires 15 minutes to

administer making a larger sample size a possibility. However, the picture card interview should be adapted to avoid difficulties surrounding the amount of words spoken by participants.

Finally, as cross-sectional research is limited in its ability to ascertain causality, longitudinal research is needed in South Africa in order to fully understand cross-cultural trajectories across groups and across time. A follow-up study of this sample should be conducted to determine whether the differences in exclusive or multiple caregiving and caregiving strategies played a role in the formation of the attachment relationship between the mother and child. This could also provide further data on the influence of culture and socio-demographic variables. Additionally, qualitative measures should be incorporated to provide a better understanding of the parenting ethnotheories and caregiving beliefs.

5.9 Concluding remarks

In this study, the early social experiences of three month old infants in two different cultural environments were investigated. Two cultural models were identified, namely independence and interdependence. The data demonstrates that cultural differences influence parenting practices and strategies. The data reported in this study challenge attachment theory's universalism and provide an exploratory analysis of the different cultural conceptions regarding adaptive and non-adaptive attachment qualities. Otto (2008) argues that much of the discussion on attachment suffers from a severe ethnocentric bias of the dominant Western culture. The nature of attachment has to be treated as a complex phenomenon with a biological basis that is socially shaped and made meaningful through culture (Otto, 2008). With the limitations of this study kept in mind, there is evidence to support this notion. Further research is needed in South Africa to more fully understand the effect culture has on parenting strategies, beliefs, and attachment.

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Appendices

Appendix A: Informed Consent Form



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jou kennisvennoot • your knowledge partner

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

Title: The examination of cross cultural conceptions of different adaptive and non-adaptive attachment qualities

PRINCIPAL INVESTIGATORS: Prof. Mark Tomlinson, Associate Professor, Stellenbosch University

CONTACT NUMBER: 021-808-3446 (office)
083-301-4868 (cell)

You are being invited to take part in a research project. Please take some time to read the information on this form, which will explain the details of this project. Please ask the study staff any questions about any part of this project that you do not fully understand. It is very important that you clearly understand what this research is about and how you could be involved. Also, whether you choose to be involved in this study or not is completely up to you. No one is forcing you to take part. If you say no, this will not affect you negatively in any way whatsoever. You are also free to change your mind at any point, even if you do agree to take part in the beginning.

This study has been approved by the **Health Research Ethics Committee** and will be conducted according to the ethical guidelines and principles of the South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

This study will be conducted in Stellenbosch, Khayelitsha, and the Eastern Cape. Approximately 150 mothers and their babies will be recruited for this study and the information from the study will be examined by researchers at the University of Stellenbosch.

What are we trying to do?

We are trying to determine whether mothers care for their children differently across different cultural environments. We would like to see if the bond formed between mother and child is different across different cultural environments.

How will we do this study?

We will visit mothers and their children in Stellenbosch, Khayelitsha, and the Eastern Cape. We will conduct an interview and assessments with you when your child is three months old and again when your child is twelve months old.

What will the assessment involve?

When your child is three months old the data collector will come to your home and a socio-demographic questionnaire/interview will be conducted. Thereafter, spot observations will be carried out in order to document the social experiences of your baby in his/her everyday life. Belief systems will be assessed with the help of a questionnaire/interview as well as with the help of a picture card interview. You will also be asked to participate in a ten-minute free play session and a ten-minute daily routine situation session with your child.

When your child is twelve months old the data collector will come to your home and a questionnaire to document changes will be conducted. Thereafter an assessment will be conducted in which your child is confronted with new stimuli while you are present.

Recording: We would like to audio record and video record the interviews. We tape the interviews to check that the questions are being asked correctly. The tapes will be safely locked away for the duration of the study. After the tapes have been watched and listened to by the researchers, they will be destroyed.

Why have you been invited to participate?

We have asked you to be involved in this study because we would like to enrol women that are mothers of three month old infants in this area.

What will we be asking you to do?

We are asking you to participate in the interviews and assessments in the privacy of your home.

Will you benefit from taking part in this research?

The research may well reap benefits for how women care for their children. You will also receive a R80 food voucher for your involvement in the study.

Are there any risks involved in your taking part in this research?

This study involves you speaking to a data collector. No harm will come to you through taking part in the tasks which form the study. If you become upset by any of the questions asked of you, you can phone Professor Tomlinson at Stellenbosch.

If you do not agree to take part, what alternatives do you have?

You do not have to take part in this project and, if you decide not to, this will not affect you or your child at all.

Who will have access to your information?

All data will be stored according to the data protection act and kept in strict confidence between the different members of the research team, except in the unlikely event of child protection concerns being raised. If this study is published in a journal, all the families involved will remain anonymous.

Will you be paid to take part in this study and are there any costs involved?

You will receive a R80 food voucher for your involvement in the study.

Is there anything else that you should know or do?

- You can contact Prof. Mark Tomlinson at 021- 808 3446 (office) or 083 301 4868 (cell) if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by research staff.
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I agree to take part in a research study entitled (Insert title).

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*)

.....

Signature of participant

Declaration by investigator

I (*name*) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above

Signed at (*place*) on (*date*)

.....

Signature of investigator

Appendix B: Socio-demographic Questionnaire**SOCIO-DEMOGRAPHIC'S QUESTIONNAIRE****DATE:** ___/___/___**DC:** _____**Participant Identification Number (PID)** _____**PRIMARY CARETAKER'S RELATIONSHIP TO THE CHILD**

1. Child's name? _____

male	female
------	--------

2. What is the birth date of the child? ___/___/___

3. Does the child attend a creche?

Yes=1	No=2
-------	------

4. Does the child have a nanny?

Yes=1	No=2
-------	------

4. Are you the biological mother of the child?

Yes=1	No=2
-------	------

5. **If You Are Not** the biological mother: What is your relationship to the child? (E.g. child's mother's sister or paternal grandmother)

NOTES OR COMMENTS BY THE RESEARCH ASSISTANT

6. Are you exclusively breastfeeding/ bottlefeeding? Or mixed?

breast	bottle	mixed
--------	--------	-------

7. Is this your first child?

Yes=1	No=2
-------	------

If no, specify dates from birth:

dd mm yy

Child 1 ___/___/___

Child 2 ___/___/___

Child 3 ___/___/___

Child 4 ___/___/___

Child 5 ___/___/___

8. Marital status of primary caretaker:

Single	1
Divorced/ Separated	2
Married	3

Widowed	4
Living with partner	5

9. What is your religious affiliation?

10. What is the **father's /current partner's** religious affiliation?

11. Race? _____

12. Date of birth of mother: _____

13. Education (last standard **passed**):

	Primary Caretaker	Current Partner
No formal education	1	1
Grade 1-2	2	2
Std 1-3 (Grade 3-5)	3	3
Std 4-5 (Grade 6-7)	4	4
Std 6-7 (Grade 8-9)	5	5
Std 8 (Grade 10)	6	6
Std 9 (Grade 11)	7	7
Matric (Grade 12)	8	8

14. If College or University education:

Please indicate highest degree/diploma

15. Primary caretaker's job/occupation (including work in the informal sector)

16. **If not formally** employed, are you actively seeking a job?

Yes=1	No=2
-------	------

17. Has a doctor or nurse told you that you had or have

High blood pressure	No = 0	Yes = 1	Don't know = 2
Diabetes or sugar in the blood	No = 0	Yes = 1	Don't know = 2
Heart attack / angina	No = 0	Yes = 1	Don't know = 2
Stroke – muscle paralysis or sensory loss	No = 0	Yes = 1	Don't know = 2
High blood cholesterol (fats)	No = 0	Yes = 1	Don't know = 2
Osteoporosis / bone fractures	No = 0	Yes = 1	Don't know = 2

18. Do you take medication prescribed by a doctor (pills or injections) for

High blood pressure	No = 0	Yes = 1	Don't know = 2
Diabetes or sugar in the blood	No = 0	Yes = 1	Don't know = 2
Heart disease	No = 0	Yes = 1	Don't know = 2
Osteoporosis / bone fractures	No = 0	Yes = 1	Don't know = 2
Other (specify)	No = 0	Yes = 1	Don't know = 2

19. What is your **current partner's** job/occupation (including work in the informal sector)

20. If not formally employed, is he actively seeking a job?

Yes=1	No=2
-------	------

HOUSEHOLD INFORMATION

1. **Income** is a sensitive question to many people. However, it is very important for us to have an idea of your monthly income. We would appreciate it if you could answer the following questions:

Primary caretaker's monthly income:

No cash income	0	Between R1 and R500	1
Between R501 and R1000	2	Between R1001 and R2000	3
Between 2001 and R3000	4	Between R3001 and R4000	5
Between R4001 and R5000	6	More than R5000	7

2. Current partner's monthly income:

No cash income	0	Between R1 and R500	1
Between R501 and R1000	2	Between R1001 and R2000	3
Between 2001 and R3000	4	Between R3001 and R4000	5
Between R4001 and R5000	6	More than R5000	7
Don't know	8		

3. Please list all the members of the household where child lives (people generally sharing the same main meal).

Start with the **household head** and then complete from the oldest to the youngest person (including child)?

Name	Sex	Age	Relationship to _____ (Child name)?
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

4. Please list all the people who have died in your household, since **pregnancy** and state the relationship to the child?

Names	Sex	Age	Relationship
1			
2			

3			
4			
5			

5. In your home, how many rooms are these just for sleeping?

--	--

6. How would you describe your **home**?

Shack	1
Flat/Cottage	2
House	3
Hostel	4
Shared House	5
Room/ Garage	6
Other, please state	7

7. Household Water: Do you have access to?

Indoor Water	1
Only outside tap	2
Other source, specify	3

8. What type of toilet do you have?

Flush inside	1
Only flush outside	2
Pit/ bucket	3
Other source, specify	4

9. Which of the following do you have in your house at the present time?

Electricity	Yes=1	No=2
Television	Yes=1	No=2
Radio	Yes=1	No=2
Motor vehicle	Yes=1	No=2
Fridge	Yes=1	No=2
Washing machine	Yes=1	No=2
Telephone	Yes=1	No=2
Video machine	Yes=1	No=2
Microwave	Yes=1	No=2
MNet	Yes=1	No=2
DSTV	Yes=1	No=2

SUPPORT

1. Is the child's biological father living with you (if you are the biological mother)?

Yes=1	No=2
-------	------

2. Does the child's biological father give any financial assistance?

Yes=1	No=2
-------	------

3. Do you get financial help **for the child** from your current partner (if you are the biological mother and if he is not the biological father of the child)?

Yes=1	No=2
-------	------

4. Do you get a child support grant **for the child**?

Yes=1	No=2
-------	------

5. Do you get support/help **for the child** from your family?

Yes=1	No=2
-------	------

If yes, what kind of support (financial, care, physical, emotional,...)?

6. Is the child currently covered by medical aid?

Yes=1	No=2
-------	------

PREGNANCY AND BIRTH

1. How long was the pregnancy? _____ months

2. Did you drink any alcohol during pregnancy?

Frequency/amount

3. Did you smoke during pregnancy?

Frequency/amount

4. Did you take any drugs during pregnancy?

What?

5. Were there any complications during pregnancy?

Yes=1	No=2
-------	------

If yes: What kind of complications and when during pregnancy?

6. Where was the baby born?

Hospital Health Center at home elsewhere: _____

7. How was the delivery?

vaginal caesarean section instrumental delivery other: _____

8. Were there any complications during delivery? Yes No

If yes: What kind of complications?

9. Weight at birth: _____ gram Present weight: _____ gram

Height at birth: _____ cm Present height: _____ cm

Head circumference at birth: _____ cm Present head circumference: _____ cm

10. Compared to the other children of this child's age, would you say this child's health is:

Good	1
Fair	2
Poor	3

If **POOR** please explain

11. Has your child been seriously ill / seriously injured since he/ she was born?

Yes=1	No=2
-------	------

Which diseases/injuries?

12. Has the child been in hospital?

Yes=1	No=2
-------	------

For how long and why?

13. Has the child ever been diagnosed with TB?

Yes=1	No=2
-------	------

14. Do you know about the child's status with respect to HIV?

Yes=1	No=2
-------	------

15. Were there any problems so far concerning ...

sleeping? _____

feeding? _____

crying? _____

Other: _____

16. According to you, does the baby have an **easy** or a **difficult temperament**? Why?

17. Routines and activities with the child

a. Who takes care of the child most of the time? Please rank in order of amount of care?

Rank order	Names	Sex	Age	Relationship
1				
2				
3				

4				
5				

b. How much time are you spending with the baby during a normal day?

c. Which activities do you like to do best with your child?

d. Is there anything that you do not like doing as much with your child?

e. Which languages are spoken in your household?

f. Who sleeps with the baby?

	Names	Sex	Age	Relationship
1				
2				
3				
4				
5				

Appendix C: Spot observations time sheet

Participant:

Test date:

Morning

Afternoon

Evening

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
sleep																														
awake																														
fuzz/cry																														
view/reach																														
interaction partner(s)																														
nursing																														
other care																														
no body contact																														
holding																														
close proximity																														
baby on floor																														
baby on bed																														
baby in babychair																														
baby in carriage																														
face-to-face pos																														
eye contact																														
caressing																														
talking																														
vestibular stim.																														
toy stimulation																														
object play alone																														
object play together																														

Remarks

Appendix D: Spot observations coding scheme

The codes include the following:

Infant States

Sleep. The infant is sleeping or is about to fall asleep (closed/closing eyes)

Awake/Attentive. All signs of sleep and sleepiness are absent and the infant does not fuss or cry.

Fuss/Cry. The infant is awake and cries or manifests signs of being upset by moaning, whining, or whimpering

Persons' presence

Each individual person with the infant

within reach (straight arm-length or closer), or *within viewing distance*: who can the infant reach or view

Interaction partner(s) of the child, i.e. person(s) that really do something with the child (apart from being present)

We should indicate individual persons (if there are very many people present, use numbers to refer to the individuals):

- 1) mother
- 2) father
- 3) siblings
- 4) grandmother (mother's mother)
- 5) grandfather (mother's father)
- 6) grandmother (father's mother)
- 7) grandfather (father's father)
- 8) aunt (mother's sister)
- 9) aunt (father's sister)
- 10) uncle (mother's brother)

- 11) uncle (father's brother)
- 12) niece (mother's side)
- 13) nephew (mother's side)
- 14) niece (father's side)
- 15) nephew (father's side)
- 16) other relatives
- 17) adult neighbors (how many?)
- 18) neighbor's kids (how many?)
- 19) unfamiliar visitors / strangers

Parenting behaviours are coded for the interaction partner

Nursing. The interaction partner (usually mother) nurses the infant.

Other care. Bathing, dressing, etc.

Amount of body contact (exclusive categories)

No body contact. Child and interaction partner play with an object with the baby put in a chair, put on a blanket, etc.

Holding. The baby is held with hands in front of the interaction partner without body contact. The baby can also stand on interaction partner's upper legs.

Close proximity comprises more contact between interaction partner and infant than just interaction partner's hands touching infant's body. The baby is carried or held on interaction partner's *arms, hip, or back*, or the baby is held on interaction partner's *lap or legs*. Interaction partner and baby may also lie close to each other on a bed or the interaction partner may be sitting in body contact with a baby who is lying.

Missing: if you cannot tell whether it is body contact or not

Position of the baby

baby on floor

baby on bed/couch

baby on babychair (upright position)

baby in carriage/stroller (the child can move)

Facial constellation (exclusive categories)

Face-to-face position. Infant and interaction partner have a bodily position to each other that allows them to look into each other's' faces.

Eye-contact. The occurrence of eye-contact between baby and interaction partner.

Activities

Vestibular stimulation. The infant is rocked with the whole body or upper trunk. The infant can have body contact or can be lying in a cradle.

Caressing. The interaction partner caresses the infant with her/his own face or parts of the face (mouth, nose).

Talking. The person talks to the baby. *It should be more than just a word, repetition of a name counts.*

Toy stimulation. The person uses various objects to entertain the baby, without actually playing with the baby.

Object play

Object play together. The interaction partner introduces an object or toy into the interaction and tries to direct the infant's attention to the object.

Object play alone. The infant explores an object alone.

Appendix E: Picture Card Interview – Primary care



Khayelitsha picture



Greater Stellenbosch picture

Appendix F: Picture Card Interview – Body contact



Khayelitsha picture



Greater Stellenbosch picture

Appendix G: Picture Card Interview – Body stimulation



Khayelitsha picture



Greater Stellenbosch picture

Appendix H: Picture Card Interview – Face-to-face interaction



Khayelitsha picture



Greater Stellenbosch picture

Appendix I: Picture Card Interview – Object stimulation



Khayelitsha picture



Greater Stellenbosch picture

Appendix J: Picture Card Interview coding example

The codes refer to the content of the statements with respect to the parenting systems primary care, body contact, body stimulation, object stimulation, face to face contact , as well as the interactional mechanisms of positive and negative emotions referred to both infant and mother.

In each utterance of the interviewee the parenting systems and interactional mechanisms are coded as they are mentioned. If the same category is mentioned several times in one utterance it is coded repeatedly.

Parenting Systems

- **Primary Care**

All meaning units (comments) relating to nursing, diapering, bathing, washing combing etc. or securing the child's health are coded.

Examples: I like this picture because she is feeding her baby.

To breastfeed is very good.

- **Body Contact**

Comments relating to mode and extent of body contact without qualifying it in terms of warmth.

Examples: The mother touches the baby a lot.

The mother is kissing the infant.

- **Body Stimulation**

Comments relating to motor exercises and motor handling and massaging.

Example: She is exercising the child, moving her arms and legs....

- **Object Stimulation**

Comments relating to objects and object exploration. Pacifier are objects only if they are introduced in a playful, explorative manner.

Examples: It's nice how they play with the toys.

I don't give toy to my baby, he's too young.

- **Face-to-Face**

Comments refer to the facial system and vis a vis facial behaviour. Referring to dialogues is also coded here.

Examples: They look at each other.

The infant is gazing at the mother's face.

- **Vocal Stimulation**

(Talking, Singing, Naming) is also coded.

Example: She is singing to her baby.

Interactional Mechanisms

- **Negative Emotion of the Infant**

Comment refers explicitly to negative emotions and emotional states of the child.

Examples: The child is sad.

My child stops crying when I do like this.

In this picture the infant doesn't cry.

- **Positive Emotion of the Infant**

Comment refers explicitly to positive emotions and emotional states of the child.

Examples: The child looks happy in this photograph.

The infant doesn't smile.

The child looks happy in this photograph.

- **Negative Emotion of the Mother**

Comment refers explicitly to negative emotions and emotional states of the mother.

Examples: I fear to move fast the infant like in this picture.

I suffered very much at the beginning of the breastfeeding.

- **Positive Emotion of the Mother**

Comment refers explicitly to positive emotions and emotional states of the child.

Examples: I'm so happy.

I love this picture.

I like it very much.

Additional notes

General words are coded referencing to the context of the specific photo the mother is talking about.

Examples

I like to play with my baby like in this picture

and

I usually do like this, I use this position when I want to play

(Body Stimulation when the mother is talking about the photo of Body Stimulation);

To pay attention to repetitions:

I move her arms, legs (Body Stimulation 1 time);

I like to move her arms, to exercise her legs (Body Stimulation 2 times);

In this position she cries, but when I jump her up she stops crying immidiatly (Negative Emotion of the Infant 2 times);

I love, I love it (Positive Emotion of the Mother 1 time).

Appendix K: Socialisation Goals Questionnaire

In the following you find a **list of developmental goals**. Naturally, this list is not complete but a compilation of goals that were mentioned in all cultures. There are no correct or wrong answers. We are interested in your personal opinion on **how important these goals are**. The goals will be compared in pairs. Please indicate whether one of the goals is at least **slightly more important** (" \leftarrow ") or whether both goals are **equally important** (=). That one goal is slightly more important does not mean that the other was unimportant. Please do not try to think of a concrete situation where both goals are opposed but rather think of the goals in general. Since each goal is compared with all others, **each goal will be mentioned several times**. This should not bother you.

Is it more important that children [A] or [B]?				
Which goal is <u>at least slightly more important</u> ?				
	\leftarrow	=	\rightarrow	
1. develop personal talents and interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to share with others
2. learn to respect elderly persons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn that he or she is different from others in many respects
3. learn to be assertive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to do what parents say
4. learn to maintain social harmony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to respect elderly persons
5. learn to express own preferences very clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	develop personal talents and interests
6. learn to do what parents say	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to maintain social harmony
7. learn that he or she is different from others in many respects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	develop personal talents and interests
8. learn to share with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to express own preferences very clearly
9. learn to respect elderly persons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to do what parents say
10. learn to maintain social harmony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	develop personal talents and interests
11. learn to do what parents say	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to express own preferences very clearly
12. learn to share with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to respect elderly persons

13. learn that he or she is different from others in many respects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to maintain social harmony
14. learn to be assertive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to share with others
15. learn to express own preferences very clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to respect elderly persons
16. learn that he or she is different from others in many respects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to be assertive
17. develop personal talents and interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to respect elderly persons
18. learn to maintain social harmony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to share with others
19. learn that he or she is different from others in many respects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to do what parents say
20. learn to respect elderly persons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to be assertive
21. learn to express own preferences very clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to maintain social harmony
22. learn to share with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn that he or she is different from others in many respects
23. learn to be assertive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	develop personal talents and interests
24. learn to express own preferences very clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to be assertive
25. learn to do what parents say	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to share with others
26. learn to express own preferences very clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn that he or she is different from others in many respects
27. develop personal talents and interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to do what parents say
28. learn to be assertive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	learn to maintain social harmony