Attachment & Culture (1)

研究論文

Attachment & Culture (1)

愛着と文化（上）

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＜要約＞
この論文は、愛着システムの適応値に対するボウルビィ（1982）の強調点を中心とし、南カメルーンの首都ヤウンデの郊外にあるンコルビソンコミュニティにおける非西洋文化的環境での愛着について調査するものである。ンコルビソンにおける環境が他の愛着適応パターンを可能にするため、ンコルビソンの人々における愛着スタイルは、西洋の愛着スタイルとは異なると想定される。この論文におけるンコルビソンでの愛着パターンの分析は、社会文化的パラメーター、社会化戦略、および子供の愛着発達の相互関係を理解するために、子供の発達の生態文化モデル（Keller, 2007）を応用している。
家族以外の誰かと対面した際の、25人のンコルビソンの子供たちの愛着パターンを特定し、愛着に関する母親の信念体系を特定し、信念体系と愛着スタイルに対する社会人口学的要因の影響を評価した。この混合手法のアプローチにより、ンコルビソンの社会文化的環境における文化固有の愛着スタイルの意味と機能を明らかにすることが可能となった。
その結果、ンコルビソンの子供たちにおいて3つの異なる愛着スタイルが明らかとなり、これらは行動的および生理学的感情制御の違いにより特徴付けられる。

<Keywords>
Attachment theories, Strange Situation, Adaptation, Culture, Instinct, Environment, Nkolbisson, Stress

1 Introduction

The objective of this paper is to examine the function and regulation of the attachment system within a prototypical interdependent socio-cultural context, namely the Nkolbisson community. In line with the ecocultural model of child development, this paper implements

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three different levels of analyses: socio-demographic parameters, maternal belief systems, and children's developmental outcomes. In my research, I have been inspired by John Bowlby and Mary Ainsworth.

John Bowlby, a British psychiatrist, outlined the study of animals and primates' behavior including human, known as ethology in his attachment theory. He developed numerous topics on attachment subject that inspired scientists and practitioners around the world. Nowadays, there are journal articles written and published referring to the topic of attachment. However, individual identification and their differences are what is generally discussed in most articles, with the purpose to find out the causes and the outcome of attachment in relationship. It is to Bowlby's credit that attachment has been placed in the middle of human development domains, emphasizing that: "*socioemotional development was essential to all developmental domains.*" [1)]

Mary Ainsworth, an American-Canadian, is a developmental psychologist. She is Bowlby's associate and another well-known contributor to attachment theory. She is famous for her work in the development of the attachment theory. She designed a concept called *Strange Situation*. This model is said to be generally used by ethological attachment researchers and applied to people of different ages, with different economic and cultural backgrounds. The outcome of her studies has provided evidence of the universality of the attachment phenomenon as well as different attachment classifications.

A system called Adaptation is attributed to Bowlby attachment theory as his core concepts. He illustrated this by the fact that: "*No system whatever can be so flexible that it suits all and every environment. This means, when the structure of a system is considered, the environment within which it is to operate must be considered simultaneously.*" [2)] Moreover, individuals who are adapted to their environments are more likely to survive and reproduce. For example, in order to develop and thrive, an infant has an innate need to form an attachment bond with a caregiver. Thus, the concept of adaptation requires an understanding of the corresponding environment, as: "*Members of each species are suited for life in a particular environment – often called the ecological niche.*" [3)]

Nevertheless, Bowlby's ethological attachment research seems ethnocentric, because he looks at the world from a Western perspective. By doing so, he leaves out the fact that there is a possibility that a non-Western can influence the attachment system. Another obvious example for such an ethnocentric attitude is the Strange Situation designed by

1）(Keller, 2004, p. 80)
2）(Bowlby, 1982a, p. 50)
3）(Bowlby, 1982a, p. 53)

Mary Ainsworth associated with others during the 1960s.[4] She designed an instrument to measure differences in attachment style in young children. Up until now, this procedure has been applied to thousands of mother-infant pairs of various socio-cultural contexts with the belief that securely attached infants are a prototype of nature and that insecure attachment is abnormal and maladaptive.[5] The undesirable effect of insecure attachment is caused by differences in maternal sensitivity towards infants. The concept of *insecure attachment* or adaptive alternative developmental strategies, rather than pathology, can only occurred to dissidents who did not trust the system, and who were ejected from their attachment community because of their freethinking behavior.[6]

Criticisms rose against Bowlby and Ainsworth works. For instance: Robert Alan Levine, an American anthropologist[7] known for his multidisciplinary and cross-cultural work on child development, mentions that the study of attachment theoretically formulated by John Bowlby and translated into research by Mary Ainsworth is perfect if somewhat perverse example: perfect in illustrating a jump from human universals to individual differences without considering cultural variations between; perverse because, though the first developmental study of attachment was carried out by Ainsworth in Africa, it gave rise to an approach as blind to culture as any other in psychology." [8]

The choice of Nkolbisson and the focus on the attachment system of this suburb of Yaoundé the capital city of Cameroon is not accidental. I have visited there, and I have seen people evolved in this land of my ancestors. The environment conditions there has nothing to do with the standardized Western methods. This paper has to consider the universality of the attachment system while challenging the universality of the four attachment qualities.

2 Attachment theories

2. 1 Bowlby's Theory

In order to understand the relation between attachment and culture, it is necessary to explain the core assumptions of attachment theory as formulated by John Bowlby (Bowlby, 1982a, 1986). As he was motivated by his clinical work as a psychoanalyst, Bowlby started searching for answers to one of the major questions of science: *"How and why do certain early ontogenetic events have such lasting effects on later development ?"* [9] Then, from a

4） (Ainsworth, Blehar, Waters, & Wall, 1978)
5） (Chisholm, 1996)
6） (Lamb, Thompson, Gardner, & Charnov, 1985)
7） Harvard University Anthropologist
8） (LeVine & Norman, 2001, p. 86)
9） (Schore, 1999, p. xi)

biologist, ethologist and control systems theories perspective, he postulated an *instinctive attachment* system in humans. This system in operation would adjust the objectives set of the attachment instinctively in humans. He explained that attachment was an emotional bond between an infant and caregiver and the infant's instinctive desire to maintain the presence of an attachment figure. Therefore, when an infant cries, protests or follows the caregiver it is the obvious attachment behaviors that can be translated as an instinctual effort to keep the caregiver as close as possible. By analogy, and from the ethological perspective this characteristic automatically appears to all members of the same species. Although Bowlby thought the attachment system was a characteristic of all human infants in all cultures, he did not conceive the attachment instinct as an absolute stable behavior pattern: *"Instinctive behavior is not stereotyped movement but an idiosyncratic performance by a particular individual in a particular environment."* [10)]

By introducing this line of his theory of attachment, he considered a specific environment. He acknowledged that: *"Not a single feature of a species morphology, physiology, or behavior could be understood or even discussed intelligently except in relation to that species' environment of evolutionary adaptedness."* [11)]

Bowlby also thinks that with the presence nearby of the caretakers, the attachment system shields from being harmed by other humans or being exposed to hunger or climatic hazards such as cold or heat. The most important thing though in attachment is: *"The recognition that behavioral equipment can contribute to survival and propagation only when it develops and operates within an environment that falls within prescribed limits."* [12)] From this viewpoint, the attachment system can be interpreted as an adaptation to our ancestors' epoch. Bowlby considers those as just a small social group of hunter and gatherer. To him, a mother, her children, and her daughter's children are the basic of what is a family, and it is also the primary social unit of mankind that provides instinctive behaviors in evolution adaptation. Bowlby believes that a solid biological basis for the attachment system is the cause of human attachment behaviors. He noted that distinctive attachment behaviors begin with innate behavior in infancy but change when a child grows up. A newly born child does not show any preferences to their biological parents over a stranger. children would accept anyone who treat them gently. As time passes though, the child will start being attracted to one particular person over another especially if that person gives them the affection they seem to desire. Based on the findings above, Bowlby believes that the development of an

10）(Bowlby, 1982a, p. 39)
11）(Bowlby, 1982a, p. 64)
12）(Bowlby, 1982a, p. 46)

attachment relationship consists of four stages:

Stage ONE is *pre-attachment*. It is about a month after the childbirth. At that stage, the newborns, in order to process information generated around them, they have only their inborn cognitive capacities to count on. They do not have the capacity to tell the difference between people surrounding them.

Stage TWO represents *attachment in the making*. That stage is between two and six months after the childbirth. At that stage, the child has started to establish contact with his or her caregiver. For example, they smile when they see a person they recognize.

Stage THREE is a clear-cut attachment. It is between six and eighteen months after the birth of a child. At that stage the child has developed somehow, and clearly seek attention of the caregiver.

And stage FOUR is the goal-corrected partnership. The child is between two and three years of age. At this stage, the bond between the child and the caregiver is tight. The child has begun to take initiatives of his or her own related to attachment. Infants have now become attached to adults who are sensitive and responsive enough as to interact socially with them and who stay and take care of them for some time. Their experiences with their caregivers would awaken some behaviors by themselves those would be translated as emotion, expectations, or beliefs. Bowlby calls this system the *"internal working model"*. So, with age, this experience will develop and allow the child to face with more or less confidence new types of social interactions.

2. 2 Mary Ainsworth Theory

Mary Ainsworth introduced the *attachment-exploration* concept to the attachment theory. She suggested that the attachment system and the *exploratory system* are opposing one other. She explained that, whenever a child feels threatened, the attachment system would trigger itself in that child; and when a child feels safe, then the child would feel free to explore the environment. The mother is the first rampart of the attachment because she would retrieve the child from the danger, and she would also secure the base that allows the infant to be able to explore the world. So, when Ainsworth created the *Strange Situation*, she provided an instrument with the method to operationalize attachment. She enabled to measure differences in attachment relationships in a standardized laboratory setting.[13)] Children behaviors were observed in the *Strange Situation* would reflect the rules learned from a specific caregiver they had been with. By observing a child at home,

13）(Ainsworth, 1985)

Ainsworth hypothesized that differences in attachment quality might be due to differences in maternal sensitivity or responsivity towards the child and might be connected with socio-emotional and cognitive functioning of the child later. Ainsworth first identified three different attachment qualities, mainly depending on the infants' exploratory behavior and behavior when reunited with the mother. In 1988, Bowlby stated: "Three principal patterns of attachment present during the early years are now reliable identified, together with the family conditions that promote them. One of them is consistent with the child's developing healthily, and two are predictive of disturbed development." [14] These three types of attachment relationships and their interpretation by Ainsworth and colleagues are derived from the infant's behavior when reunited with the mother after a short separation. They can be summarized as follows: [15]

(1) *Secure attachment*, indicates that infants actively seek contact with their mothers when they return, calm down when with their mothers again, and use their mothers as a secured base for exploration. Infants with secure attachment are often joyful in the presence of the parent, display negative emotion openly and show confidence when their needs are met by the caregiver. Securely attached infants show that unmanageable feelings of distress can be resolved by turning to the caregiver who displays a sense of calm and control.

(2) *Anxious-avoidant attachment*, indicates that infants ignore or actively avoid their mothers upon their return. They establish close proximity and play with anyone without using the mother as a reference. Infants with an avoidant attachment learned to reveal as little as possible about their inner experiences of negative affect, because the mothers have been non-responsive to negative affect. Those infants pretend all is well because they have learned that it doesn't pay to acknowledge negative emotions.

(3) *Anxious-ambivalent attachment*, shows infants with great distress when left alone by their mothers and don't calm down when reunited with them: they remain stressed or show anger towards their mothers instead. Home observations indicate that anxious-ambivalent children have parents who ignore or misinterpret infants' emotional signals. Therefore, infants overtly display intense negative emotions as they are never sure whether their needs will be met by their caregiver. These infants show an acute emotional conflict in the *Strange Situation*, conveying a sense of confusion as to from where and from whom relieve may come.

Other research fields such as anthropology confirmed some of early hypothesis but also challenged some of them. Anthropologists for instance doubted that children could

14）(Belsky & Rovine, 1988, p. 166)
15）(Ainsworth et al., 1978; Belsky & Rovine, 1988)

be exclusively raised by mothers[16] and socio-biologists as well as cultural psychologists provided evidence that different attachment patterns represent adaptive behavioral strategies in different environments.[17]

3 Evolutionary and biological: foundation of attachment

3. 1 Our primogenitors environment

Humans and their fossil ancestors are said to have evolved from the African savannahs.[18] In the environment where the evolutionary *adaptness* occurred, referred to as the EEA, humans had to find their way out. Attachment between infant and caregiver, across cultures, is commonly believed to be a prime example of a behavior pattern that has evolved as an adaptive response to the choices humans had to make in those early days.[19] The only objective and function of the attachment system was to keep the baby close to the caregiver for safety, nurturance and social interaction.[20] Infants who could imitate their parents' behaviors when they became adults with the help of attachment behaviors did so because they were equally protected as were those of our fossil ancestors despite the fact that the latter lived in a less secure environment. It is believed that infants of attachment behaviors had to be protected against predators, climate variations and were better nurtured.[21]

Originally, Bowlby has conceived of the EEA as an environment where mother father child-rearing units were the norm with the mother being the exclusive caretaker of a child (Bowlby, 1982a). This idea is very alike the Victorian ideal of nuclear families of that time with a traditional division of labor; mothers taking care of children, fathers providing the family income.[22] Anthropology, sociobiology, and primatology however, question this long-standing ideal of an EEA characterized by mother-father child-rearing units and brought into focus the possibility of assistance from group members other than genetic parents for child rearing.

The most comprehensive account in this respect is formulated in the *cooperative breeding model* by Sarah Hardy,[23] born Sarah Blaffer, an American anthropologist and primatologist. She demonstrated that a reproductive strategy and social system in which

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16）(Hardy, 1999, 2005)
17）(Voland, 2000)
18）(Tooby & Cosmides, 1990)
19）(Grossmann, Grossmann, & Keppler, 2005; Hinde, 1991; Keller, 2002)
20）(Carlson & Harwood, 2003; Grossmann & Grossmann, 1990; van IJzendoorn, 2005)
21）(Bowlby, 1982a)
22）(Hardy,1999, 2005)
23）(Sarah Blaffer, 1999, 2005)

non-parental members of a social group called alloparents help to support offspring who are not their own. This phenomenon occurs across diverse animals; predominantly in birds, wild canids, mongooses, rodents and several species of primates.[24] Other anthropologists show evidence that humans can benefit from an extended family system as well, which usually consists of relatives. While nuclear families can survive and reproduce, they are likely to fall short compared to families that can rely on a more extensive network of support.[25] Most of the time, living in group or social units offers advantages such as a lesser probability of being attacked, which also provide a better defense against aggressors and more efficient food acquisition.[26] In the network, different members of the family have different roles: Fathers are supposed to function as protectors from infanticide,[27] whereas siblings, grandmothers as well as matrilineal *allomothers* seem to offset material time constraints.[28] Mothers benefit from *alloparent's* help by redistributing the cost of raising offspring among themselves and are thereby still able to spend a considerable amount of time on domestic activities, hunting, or working on the fields rather than on child care.[29]

The altruism of alloparents is better explained by the *theory of kin selection*,[30] as formulated by the Japanese primatologist Imanishi and the British sociobiologist Hamilton (1964): a costly action should be performed if: $C < R \times B$, where C is the cost in fitness to the actor, R the genetic relatedness between the actor and the recipient and B is the fitness benefit to the recipient. Fitness costs and benefits are measured in re-productiveness. *Alloparents* provide help if the cost of helping is less than the benefits to offspring calibrated in line with the alloparent's degree of relatedness to the offspring.[31] *Alloparents* enhance their inclusive fitness by helping kin[32] and cooperative breeding systems enhance the fitness of its members by reducing birth intervals, raising maternal fertility and promoting infant survival in primates[33] as well as in humans.[34]

Anthropology provides exhaustive examples of cultures where infants are being cared for by a variety of caregivers (Cole & Cole, 1989; Seymour, 2004), contrary to the

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24）(Clutton-Brock, 2002; Lancaster, Kaplan, Hill, & Hurtado, 2000)
25）(Mace & Sear, 1997, 2006)
26）(Voland, 2000)
27）(Hurtado & Hill, 1992)
28）(Hardy, 1999)
29）(Kramer, 2005)
30）(De Waal, 2003)
31）(West, Murray, Machado, Griffin, & Herre, 2001)
32）(Trivers, 1997; van IJzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2006)
33）(Silk, 2002)
34）(Daly, Salmon, & Wilson, 1997; Hardy, 2005)

assumption prevailing in Western countries as well as in dominant developmental theories that exclusive mothering is essential to a children's wellbeing.[35] For instance, in the Democratic Republic of Congo, in Central Africa, there is a tribe called Efe Pygmies. In that tribe, from the very moment a child is born, the newborn is passed between women who collectively hold, carry, and nurse the infant. At the age of six weeks, the Efe Pygmies child has spent more time with other people of the tribe than with her/his biological mother.[36] Western countries are still very much behind the mother-centered childcare system, where mothers are exclusive full-time nurturers without kin assistance in close vicinity.[37] Applying the perspective of *kin selection* in evaluating attachment is also about tying emotional bonds with other kin that serves similar functions.[38] This explains the mechanisms of fostering the establishment of attachment toward frequent interaction partners, not necessarily restricted to biological parents.[39]

Another line of support for the deep evolutionary underpinnings of the attachment system stems from comparative research, providing evidence that attachment and parenting are also found among non-human primates.[40] Chimpanzees display typical attachment and parenting behaviors,[41] and those reared in captivity by human allomothers can even be tested with the help of the Strange Situation system.[42] The study of emotional development in chimpanzees has shown that chimpanzee mothers nurture their infants' integrative capacities, including their socio-emotional communicative skills, displaying parenting skills closely related to the intuitive parenting programs of human mothers (Bard, 2002).

Since the attachment and parenting systems comprise of an instinctual repertoire of behaviors that evolved from human phylogeny, it is deeply rooted in genes and neurobiological processes.[43] To fully understand attachment, it must be considered how these biologically-based processes occur within the context of environmental stimulation. Though attachment is biologically 'prewired', external ingredients are necessary for its emergence and functioning (Tooby & Cosmides, 1990). Only by understanding the interaction between maturation and experience (environmental stimulation), can one begin to appreciate the effects of individual as well as cultural experiences of the child's

35）(Barlow, 2004)
36）(Ivey, 2000; Tronick, Morelli, & Ivey, 1992)
37）(Seymour, 2004)
38）(Belsky, 1997; Trivers, 1996)
39）(Porges, 1997; 2003)
40）(Bard, 2000, 2002)
41）(Bard, 2002; Miller, Bard, Juno, & Nadler, 1986, 1990)
42）(Inoue, Hikami, & Matsuzawa, 1992)
43）(Maestripieri & Roney, 2006)

attachment relationship.[44] The prerequisites necessary for attachment formation are introduced in the following section: the infants' genetic preparedness to learn, the infants' innate capacities to elicit social engagement in adults, and the refinement of developing brain structures and brain chemistry in accordance to environmental input.

3. 2　Flexibility of attachment

Humans are genetically ready to start extracting new information needed within their surrounding environment in order to develop. The genetic information that allows every living organism to function, grow and reproduce, is attached to each individual's DNA. Genes, those units of heredity, that are transferred from a parent to an offspring, are selected depending on their adaptive value in our ancestors' environment and are therefore primarily adapted to the environment of evolution adaptedness.[45] The inheritable information which comprises a gene manifests as functional genetic programs.[46] These programs are either closed and contain invariable information, such as: reflexive action patterns, or they are open and labile to environmental information, like attachment behaviors. Open genetic programs need information then use it within the surrounding environment, thereby acquiring new information through learning.[47] Development can be thought of as a product of genes interacting with each other and with the environment.[48] Gene-environment interactions activate open genetic programs that in turn affect the degree of refinement in developmental programs and also influence development outcomes, such as physiology, temperament, and behavior. People differ in their genetic composition, their activated genetic programs, and in their experiences which influences modulation. This allows human behavior to be highly flexible and environmentally responsive to the degree that: *"Designs that produce 'plasticity' can be retained by selection only if they have featured that guide behavior into the infinitesimally small regions of relatively successful performance with sufficient frequency."*[49]

A child development depends on early experiences in shaping the functional capabilities of the developing brain.[50] Newborns may be immobile and immature, but they seem to be equipped with specific characteristics and behavioral competencies to elicit environmental stimulation, such as social engagement and nurturance. With their physical appearance,

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44）(Panksepp, 2001)
45）(Gangestad & Simpson, 2000)
46）(Lorenz, 1975; Mayr, 1974).
47）(Thompson & Nelson, 2001)
48）(Keller, 2002; Nowak & Sigmund, 2004; Tooby & Cosmides, 1990)
49）(Tooby & Cosmides, 1992, p.101)
50）(Gangestad & Simpson, 2000)

they attract attention from adults. Lorenz describes the components of babies' bodies – the larger head in relation to the rest of the body, the rounded skull and salient front, the big eyes, the round and oversized cheeks, small nose, the short chubby and rounded limbs– as contributing factors to 'cuteness'. This pattern is instinctively recognizable across species and acts as a key stimulus triggering protective behavior.[51)]

At birth the human brainstem is almost fully functional, whereas the limbic system is experience-expectant and slower to mature and develop.[52)] The limbic system is the site for developmental changes associated with the rise of attachment behaviors,[53)] critical for the modulation of social and emotional behavior as well as the homeostatic regulation of body and affectional states.[54)] Bowlby's theoretical assumption that attachment is instinctive behavior, with emotions at the heart of these behaviors, has been confirmed by neuroscience. The neurobiological mechanisms of emotional processes that lie at the foundation of instinctive behaviors such as attachment behaviors as well as a control system regulating these instinctive behaviors, have been identified as being embedded in the limbic system and its orbitofrontal connections.[55)] All these studies provide an insight into the effect of deprivation on early environmental stimulation. Children tend to form attachment relationships that provide them with emotional support in stressful situations. Infants would develop more or less functional strategies in order to deal with stress which depends on the security or insecurity of the attachment relationship they are into.

4 Attachment and its manifestation to a stressful situation

4. 1 The definition of stress & the manifestation to a stressful situation

Stress is a state of mental or emotional strain or tension resulting from adverse or very demanding circumstances. Most of the time, stress occurs whenever you feel threatened. That is when the limbic system triggers the release of stress hormones through the limbic hypothalamic-pituitary-adrenal (LHPA) system.[56)] This physiological reaction is called a stress response by Haley and Stansbury.[57)]

Davidson and Fox believe that during a stress manifestation, stress hormones such as *cortisol* and the *catecholamine epinephrine and dopamine* mobilize the body for

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51）(Koops, 1996)
52）(Benes, 1994; Joseph, 1982)
53）(Ainsworth, 1967; Bowlby, 1982a; Schore, 1994, 2000, 2001a)
54）(Joseph, 1999, 2000)
55）(Schore, 2001a, 2001b)
56）(Chrysanthopoulos, Turner-Cobb, Lucas, & Jessop, 2005)
57）(Haley & Stansbury, 2003)

action.[58] Stress manifestations are adaptive: they alter metabolic functions, blood-clotting mechanisms, and alertness, all of which enhance self-defense.[59] The behavioral and physiological systems involved in the stress manifestation aim at restoring and maintaining an organism's homeostasis when perturbed.[60] Stress regulation is also defined as the recovery from a stress response.[61] Unsuccessful stress regulation, due to a prolonged exposition to fear, may result in chronic alterations of the limbic system, reducing physiological and behavioral adaptiveness that is associated with fatigue, restricted behavioral flexibility, altered lipid metabolism, and an increased probability of illness.[62]

In infants stress responses can result from infant-mother separation,[63] or vaccination.[64] The presence of a caregiver functions as a social buffer for the cortisol response. Cortisol elevations to a range of stressors are reduced or prevented.[65] Infants' LPHA systems were shown to be labile to environmental influences: Chronic maternal distress during pregnancy,[66] as well as early experiences of deprivation in infants[67] disrupt the normal development of the LPHA system and can result in a chronic increase of cortisol levels.[68] Kirshbaum & Hell hammer believe that during the first year of life caregivers constitute the most powerful resources for children to regulate their emotions, as is the case when confronted with a potentially threatening situation. Hence, the development and organization of stress-response systems in infants may be largely determined by the interactive behavior of a caregiver.[69]

Schore and Sroufe also believe that emotions represent the highest order of direct expressions of bioregulation in organisms.[70] By definition, attachment processes are concerned with the regulation of emotions.[71] Attachment theory assumes that through sensitive responses to their infants' stress signals, parents are able to reduce stressful states

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58）(Davidson, Fox, & Kalin, 2007; Fox & Davidson, 1986)
59）(McGuire & Raleigh, 1986)
60）(Barr & Gunnar, 2000)
61）(Haley & Stansbury, 2003)
62）(McGuire & Raleigh, 1986)
63）(Gunnar & Brodersen, 1992; diaper change (Mörelius, Hellström-Westas, Carlen, Norman, & Nelson, 2006)
64）(Lewis, Ramsay, & Kawakami, 1993)
65）(Gunnar, 2005 ; Gunnar et al., 1996)
66）(Weinstock, 2005)
67）(Repetti, Taylor, & Saxbe, 2007)
68）(Gunnar & Donzella, 2002)
69）(Haley & Stansbury, 2003)
70）(Schore, 2001b; Sroufe, 1996)
71）(Bowlby, 1982b)

in infants.[72] At the end of their first year of life, children of consistently sensitive parents have got accustomed to having their parents present in stress situations. These children are supposed to be securely attached and to have an internalized expectation of the caregiver's availability. They use this expectation actively as an internalized coping mechanism in stress situations.[73] In contrast, insecure/disorganized infants are said to rely only on a second-best coping strategy or lack a coping mechanism altogether (Blanchard & Main, 1979). Accordingly, their adrenocortical system should react more strongly during stress situations when compared to secure infants.[74] The hypothesized correlations between attachment classifications and stress reaction have been investigated with the help of the Strange Situation Procedure, linking measures of salivary cortisol, behavioral distress, and attachment classifications.

The hypothesized correlations between attachment classifications and stress reaction have been investigated with the help of the *Strange Situation Procedure*, linking measures of salivary cortisol, behavioral distress, and attachment classifications. There are at least two models that explain the interplay of attachment and adrenocortical activation: the *coping model* and the *arousal model*.

The *coping model* assumes that different attachment qualities equip children with different coping strategies, which are distinctively adequate for regulating their emotions. The *arousal model* assumes that only infants exhibiting behavioral stress in terms of crying or negative expressions have a heightened adrenocortical activity.

The coping model seems to be the most appropriate to describe the bio behavioral organization of secure or insecure-avoidant infants, whereas the bio behavioral organization of insecure-ambivalent or disorganized infants fits the assumptions of an arousal model better.[75] Consequently, social connection must be considered as powerful regulators of stress in early development.[76] Infants form social links because of their biosocial nature.[77] Which means children trigger their instinctive parenting behavior programs in their social interaction partners. This behavior is innate.

72）(Spangler & Grossmann, 1993)
73）(Cassidy, 1994)
74）(Spangler & Grossmann, 1993)
75）(Spangler & Schieche, 1998)
76）(Gunnar, 2005)
77）(Joseph, 1982; Joseph, 1999)

4. 2　Parents' intuitive competencies

Generally, adults' parents would react the way they should and the way they are expected to act towards a newborn. By doing so, they rely on a complementary caregiving program.[78] According to Papousek & Papousek, caregiving or parental behaviors towards infants are rooted in genetic programs with objective to support the child's adaptation to the physical and social world, which constitutes the dialectic counterpart to the infant's development of integrative competencies.[79] Parents' behavior is intuitive and it instinctively mimics and emphasizes the facial expression of certain emotional states presumed from their children's facial expression within a time span of 200-800 milliseconds.[80] This way of acting serve as a maternal rampart that increases competent emotional regulation in infants. Consequently, children are able to decode and understand the meaning of facial expressions and develop sympathy toward others as the process is reinforced through the facial expressions of their caregivers. They empirically learn the connection between their internal state and the facial expressions of others.[81] The next part leads us into the fields of cross-cultural and cultural psychology where we can observe newborns evolving within a given cultural context.

5　Cultural embeddedness of attachment

5. 1　Marginalization of culture: Research on ethology attachment

Due to the strong evolutionary and biological basis of the attachment system, researchers in ethology like Van IJzendoorn, thought of attachment to be a "human universal" mainly because of the great influence of biology in the attachment system.[82] The emphasis was particularly put on the contribution of nature to attachment at the expense of nurturing considered to be just a mother reaction to the sensitivity of her infant, which lead to one of the four different attachment qualities in infants.[83] The influence of culture on attachment was not seen as of great importance and culture was treated as an independent factor, manifested only in distributional differences of the four universal attachment patterns across cultures.[84] Most cross-cultural studies on attachment relied heavily on Mary Ainsworth's model of the Strange Situation, under the pretext that: *"The procedure itself represents a*

78）(Bell & Richard, 2000; Bowlby, 1982a)
79）(Papousek & Papousek, 1987)
80）(Papousek & Papousek, 1995)
81）(Muir, Lee, Hains, & Hains, 2005; Walker-Andrews, 2005)
82）(Van IJzendoorn, 1990)
83）(Neckoway, Brownleea, & Castellana, 2007)
84）(Keller, 2004)

culture-sensitive method appropriate for various socio-cultural contexts as it was developed by Ainsworth after research in Africa and the USA.[85] However, this first assumption that the Strange Situation reveals the same universal attachment patterns in various socio-cultural contexts, not only disregards the intrinsic role of culture in developmental processes, but is also incorrect: a close examination of Ainsworth's original publications reveals that the invention of the Strange Situation paradigm resulted from the very fact that one method, namely natural observations during house visits, did not allow the observation of attachment behaviors in both African and American children. The invention of the *Strange Situation* therefore resulted as a necessary adaptation of observational methods within the African and US-contexts.

(1) The Ganda families

In Kampala, Uganda, Ainsworth visited the Ganda families from 1954 to 1955 at home and observed attachment and explored their behaviors within their natural environment. She observed the Ganda families, and she was able to collect their general description as an ethnic group; the way they raised their children and the particularities from one mother to another. She paired each mother with her child and collected information such as feeding problems, hygiene, sleeping arrangements, the handling of an infant when the infant was in distress, health issues of infant, and the way the mother responded to each situation. There, Ainsworth was able to categorize mother-infant pairs similar to infants' attachment behaviors and infants' frequency of crying into three groups: Securely attached (N=16), insecurely attached (N=7), and non-attached infants (N=5). Her conclusion was that: *"There were distinct qualitative patterns of attachment that develop between infants and their mothers from the very beginning of life. These attachment relationships were related to the mother's attitude towards breastfeeding, the amount of care she gave to the baby, the mother's workload, and mother's competence as informant about her child"*.

Then, Ainsworth studied American families in Baltimore, MD with the purpose to examine relations between maternal behavior and infant attachment. She visited mothers and their newborns once every month at home for a period of one year.[86] Unfortunately she did not seem to have learn much about attachment behaviors. The children from Baltimore showed continuing exploratory behavior, they did not show or display any stranger anxiety and cried less often or not at all compared to Ganda children in general.[87] While giving

85）(Van IJzendoorn, 1990; van IJzendoorn et al., 2006)
86）(Ainsworth et al., 1978)
87）(Karen, 1994)

an interview Ainsworth said this: *"I all along had this idea about a secure base"*. It was so conspicuous with the Ganda babies. when the mother was there, the kid would roam all around the room and explore things. As soon as the mother got up to leave the room, the baby would stop any kind of exploratory behavior. Now the Ganda babies were much more used to having their mother with them all the time. Whereas the Baltimore babies were used to having their mothers come and go, and they were much less likely to cry when their mother left the room. So, when they were happily exploring it wasn't clear if it was because the mother was there or not." [88] Ainsworth hoped that an unfamiliar setting such as a university laboratory might raise the threshold of threat and prompt the US-children to display similar attachment behaviors as the Ganda babies did at home. Thereby she created the most prominent laboratory assessment of developmental psychology, the standardized *strange situation procedure*.[89]

(2) Standardized strange situation procedure

In this procedure a child is observed in the laboratory for 20 minutes while the mother and a stranger enter and leave the room alternately. The situation varies in stressfulness and the child's responses are observed. Depending on the amount of the child's exploration and the child's reactions to the departure and return of mother or the stranger, children are categorized into three groups. Each of these groups is supposed to reflect a different kind of attachment relationship with the mother. The foundation of the whole procedure is the assumption of recreating a flow of familiar and unfamiliar presence in children' lives. The procedure worked well within the originally developed context, and data collected from 1963 through 1967 in Baltimore provided insights about infants' attachment strategies.

(3) Infants' attachment strategy

In the unfamiliar laboratory setting the Baltimore babies displayed the expected behaviors: stopping exploration when left alone, showing fear of the stranger, crying for their mother and seeking contact with their mother upon her return. The Baltimore children at that time grew up in nuclear families with traditional gender role allocations: fathers were the sole breadwinners; mothers took care of the children.[90] Those children were therefore used to their mothers as primary caregivers; they were used to being left alone for short periods of time during daytimes. For example, when mothers fetched something from another room and were trained to sleep alone during the night. In the *Standard Strange*

88）(Karen, 1994, p. 146)
89）(Ainsworth et al., 1978; Karen, 1994)
90）(Popenoe, 1993)

Situation children experience to be left alone for some time or to be confronted with a stranger; these were things that could happen to the Baltimore children in their home environments as well. However, the new environment put the Baltimore infants under enough stress to elicit behaviors comparable to that of the Ganda babies when being left alone in their homes. Variability in the American infants' behaviors in the Strange Situation could be linked to the former home observations and yielded the important classification of secure, anxious-resistant and anxious-avoidant attachment in its relation to maternal sensitivity. Ainsworth's classification of 106 American children set the benchmark for later research, constituting the *'American standard Distribution'*: 66% secure, 12% avoidant, 22% resistant.[91] The *Strange Situation* is said to have been invented thanks to this "cultural realities" and spread around the world taking into account only distributional differences in attachment patterns.

Illustrated examples: In West Africa, Mali, Mary True (2001) used the *strange situation* with 42 Dogon mother infant pairs: mothers were given the standardized instructions and the procedure was executed according to the standardized rules. The distribution of the *Strange Situation* classifications was 67% secure, 0% avoidant, 8% resistant, and 25% disorganized. The extremely high number of disorganized infants was explained afterward as maternal frightened or anxious behaviors. The absence of avoidant behaviors was explained by often enough parenting. In other words, breastfeeding and the amount of body contact were judged as sufficient to prevent the development of avoidant behaviors. In Asia, Takahashi (1986) studied 60 pairs of Japanese mother-infant pairs and compared the Japanese distribution with Ainsworth's distributional pattern. There were no significant differences in proportions of securely attached (68%) and insecurely attached (32%) infants between the countries.

However, the Japanese insecure group consisted of only resistant children, with no avoidant ones. The findings were interpreted in terms of Japanese child-rearing customs fostering the attachment to the mother and leading to the experience of excessive separation stress caused by the procedure. Similarly, a relatively high percentage of resistant classifications relative to the number typically observed in the US results, was found in Israel by Sagi et al. (1985). In Germany, Grossmann and colleagues (1981;1985) replicated the *Ainsworth Strange Situation* with 46 mother-infant pairs in Northern Germany and found the reverse pattern of attachment classifications with a high number of avoidant infants: 34% secure, 52% avoidant, 13% resistant. These outcomes of attachment distributions show

91）(Ainsworth et al., 1978)

a lot of clear inconsistency. Nevertheless, ethological attachment theory never questioned the appropriateness of the *Strange Situation* as a tool to measure attachment qualities in diverse cultural contexts.

Another Bowlby assumption is that: *"Attachment security is universally caused by maternal sensitivity"* and *"the attachment system with its primary emotions of fear and anxiety has as its main function maintaining contact with the mother"*. Accordingly, sensitivity as defined by Ainsworth et al. (1974) focused on maternal responses toward negative infant signals. Mothers' reactions toward positive signals were assumed to be consistent with their reactions toward negative signals and therefore not taken into consideration any further.[92] Since sensitivity is a cornerstone of attachment theory, it often has to be tried and assessed in cross-cultural research.

5. 2　Importance of culture in cultural attachment research

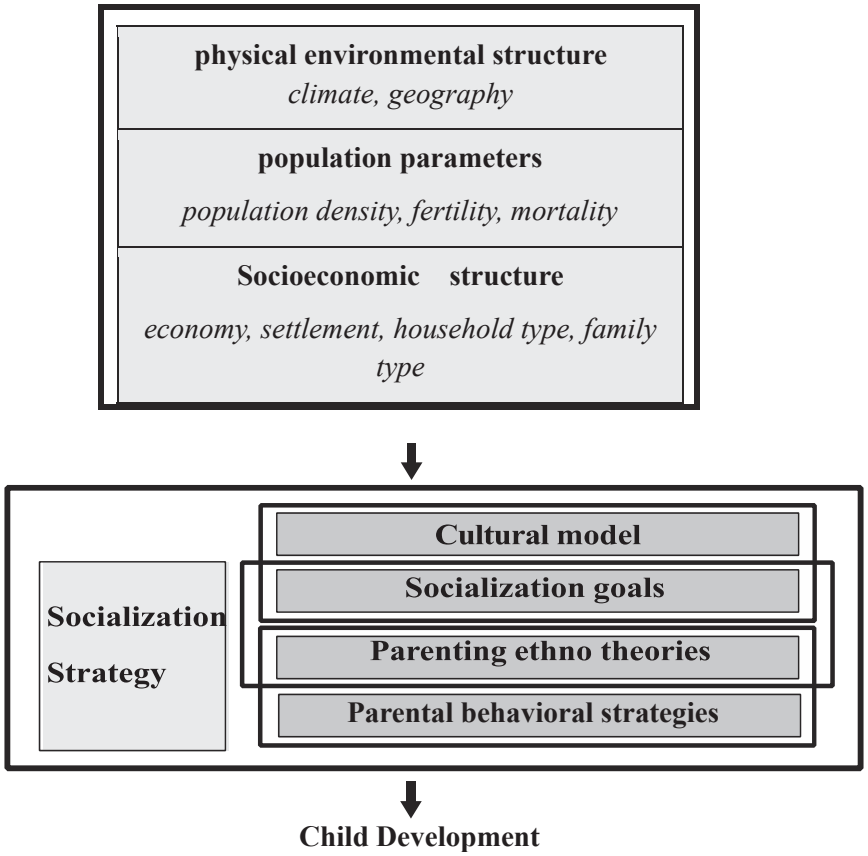
Harwood et al. (1995), conducted a study to show how sensitive culture can be when it comes to dealing with attachment. He compared socialization goals and perceptions of attachment in Anglo and Puerto Rican working- and middle-class mothers. In their study they followed Sagi's *notion that "the repertoire of attachment behaviors is similar across countries, but the selection of these behaviors is culturally specific."* [93] In order to test the cultural specificity of attachment behaviors, Harwood et al. (1995) used vignettes of *Strange Situation behaviors*, revealing that *"Anglo mothers preferred that toddlers balance autonomy and relatedness, and they disliked clinginess; Puerto Rican mothers preferred that toddlers display respectfulness, and they disliked highly active or avoidant behaviors."* They found that both socioeconomic status and culture influenced maternal socialization goals and thereby the way mothers perceived and evaluated attachment behaviors.　Identical results were found with regard to attachment relationships in the Japanese culture. Roth Baum et al. (2000; 2004; 2007) analyzed Japanese attachment relationships and concluded that the indigenous Japanese concept of relatedness, *amae*, involves insecure-ambivalent behaviors. He attributes this finding to the cultural values that are central with regard to the economic, educational and religious institutions which Japanese children are prepared for by their parents. Amae relationships, in which security is inextricably linked to dependence and harmony, are contrary to American attachment relationships, in which security is inextricably linked to independence and autonomy. However, both forms of attachment

92）(Keller, 1998)
93）(Sagi, 1990, p. 19)

predispose the development of skills needed to succeed in the different cultural spheres.[94)]

The results from the two studies above suggest that an examination of attachment relationships has to take place within their eco-cultural environments. Regarding humans, culture can be regarded as the primary mode of adaptation to the demands of a particular ecocultural context or niche. This study conceptualizes culture as a dynamic social process, creating shared activities leading to cultural practices as the material part of culture and shared meaning systems leading to cultural interpretations, which can be the symbolic part of culture.

Keller, backing Whiting's model of psycho-cultural research, proposes for the cultural study of development, the ecocultural model of development. A hierarchical model depicting the interrelatedness of ecological and socio-cultural conditions, socialization strategies, and developmental consequences in Figure 1: The ecocultural model of development with specified socialization strategies.[95)]



(adapted from Keller, 2007, p. 31, p. 103)

Figure 1: The ecocultural model of development with specified socialization strategies

94）(Roth Baum, Kakinuma, Nagaoka, & Azuma, 2007)
95）(Keller, 2007, p. 31, p. 103)

Analysis starts at the level of populations, based on evolutionary theory. According to the allowances and affordances of the physical structure of an environment, populations develop specific parameters regarding fertility and mortality rates which in turn define a population's socio-economic structure, like the economic system, family structure, and household type. Considered as a whole, these factors lead to the emergence of adequate socialization strategies, composed of parental ideas and practices, which have a direct impact on child development. The socialization strategies are expressed in everyday activities an exert lasting physical and psychical effects on the members of a cultural community.[96] *"It is through the enactment of these population-specific codes of conduct in locally organized practices that human adaptation occurs."* [97] Therefore, in order to start explaining the developmental processes, one has to begin by explaining how adaptation is organized within the local environment of the infant.

According to Keller, the most common differentiation of existing socio-cultural contexts lies in the distinction between Western and non-Western cultural orientations, representing two extremes with respect to socio-demographic characteristics.[98] Despite the fact that it is a gross oversimplification to refer to these two prototypes, the idea is to emphasize broad cross-cultural contrasts in the mutual relationships between Western and non-Western populations and their environments. Developmental pathways start early in infancy across diverse cultural contexts that relates to the socio-cultural orientations of Western or non-Western societies as well as the cultural models of independence/interdependence.[99]

5. 3　The Non-Western developmental of attachment theory.

The base of attachment theory lies on the connection between an infant and his/her mother, arranged as a linear sequence with the mother as the sole contributor to the child's physical and emotional wellbeing.[100] Which means the lasting and stable internal working models are a function of parenting behaviors with sensitive parenting leading to the preferred outcome of a secure attachment relationship.[101] However, parenting does not necessarily follow attachment theory's ideal pattern, but instead represents an adaptation to the socio-cultural environment within which children are raised.[102] Various socio-

96）(Keller, 2007)
97）(LeVine et al., 1994, p.12)
98）(Kagitçibasi, 1996b ; Keller, 2007 ; Keller et al., 2006a ; Markus & Kitayama, 1991)
99）(Keller, 2007 ; Keller et al., 2006b ; Keller et al., 2002)
100）(Ainsworth et al., 1974; Baer & Martinez, 2006; Bowlby, 1982a)
101）(Ainsworth, 1985).
102）(Whiting & Whiting, 1975).

cultural contexts promote parenting practices that are inconsistent with or even contrary to attachment theory's ideal. Different cultural contexts foster a variety of caregiving arrangements, which extends attachment relationships from the basic infant-mother bond to multi-layered bonds between an infant and multiple caregivers.[103)]

Ainsworth, in her Baltimore sample, mothers represented the exclusive caregivers of children; a childcare arrangement typical for many Western societies. The US children grew up in nuclear families within a society that was complex, industrialized, and technological, with highly educated members and a cash economy.[104)] As described in the model of ecocultural development, reproductive strategies are adaptations of the allowances and affordances of the physical structure of an environment.[105)] Cultural groups follow different reproductive strategies that can be seen as cultural formulas providing parents with historically embedded solutions for local problems of parenting.[106)] Having only few children, as in the case of Western nuclear families, can be regarded as one adaptive reproductive strategy: American middle-class parents, faced with high economic costs for raising children, but provided with good health healthcare, follow the strategy of having fewer children, but focus on equipping the infant with behavioral competencies necessary for the attainment of a job or a professional career.[107)] There is also an alternate adaptive reproductive strategy which is to have many children. This strategy is adaptive in environments with a high infant mortality rate and a difficulty of assuring subsistence, where the optimal strategy is to have as many children as possible and to focus on an infant's physical survival.[108)] The latter strategy is prevalent in environments with high infant mortality rates, insufficient medical care, poor economic support associated with little formal education. These environments can be mainly found in non-Western rural farming villagers, pastoral nomads or hunter and gatherer groups.[109)]

There is a general concept of parenting, called *component model of parenting*, which captures the universal propensities and also the cultural peculiarities that was formulated by Keller. Keller demonstrated that mothers from different cultural contexts use the same parenting systems and interactional mechanisms when caring for three-month-old infants. However, they vary in the emphasis they place on the systems and mechanisms.

103）(Neckoway et al., 2007)
104）(Popenoe, 1993)
105）(Keller, 2007 ; Keller et al., 2005a)
106）(LeVine et al., 1994)
107）(Same as above LeVine et al., 1994)
108）(Same as above, LeVine et al., 1994)
109）(Keller, 2007)

According to attachment theory, mothers are expected to be responsive to the infant's communicative initiatives, a pattern found in the West like in German dyads that were characterized by alternating, turn-taking style of communication, thereby emphasizing the ego boundaries of the baby.[110] On the other hand, non-Western like in western Africa for instance in Cameroon dyads, mothers were characterized by overlapping vocalizations and verbalizations; this co-action mode can be assumed to foster the experience of synchrony between organisms.

In the Japanese culture, mothers are expected to perceive their infants as an extension of themselves and are therefore in constant, close physical contact with their children. The Japanese parenting style contrasts with what attachment theorists have described as sensitive parenting: the most central socialization goal of Japanese mothers for their children is to become interdependent, thereby they follow a parenting strategy that puts this socialization goal into practice, and promote behaviors that are classified as insecure resistant in the *Strange Situation*. In the *Strange Situation*, Japanese children are overly needy when their mothers return and not easily calmed. They are so appalled at their mothers leaving them that they may even show some hostility or anger.

African cultures instead rely very much on multiple caregiving arrangements and are known for feeding infants on demand and keeping infants in close proximity day and night. These cultures pride themselves on instant responses to infant cues, a communal system of permanent caring and nurturing, and sensitive parenting. The objective is to create a dense network of relationships within which mutual sharing and obligations ensure that an effective safety net is in place for infants. Nevertheless, insensitive maternal behaviors, as defined by attachment theory, were observed in African infant-mother interactions. The maternal insensitivity explained the unusual high proportion of infants classified as disorganized in the study by True,[111] which conforms to attachment theory's predictions.

（令和5年4月13日受付、令和5年7月13日再受付）

110）(Keller, 2007 ; Keller et al., 2007)
111）(True, 2001)