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Infant rhythms versus parental time: Promoting parent–infant synchrony

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ABSTRACT

Traditional psychoanalytic theories of early development have been put into question by developmental psychology, and particularly by attachment theory. Psychopathology appears to be more linked to interpersonal relationship problems rather than to intra-psychic conflict, as hypothesized in Freudian drive theory. Establishing synchrony between parent and infant is probably one of the major tasks of the first year of life. Attachment theory appears to be an effective paradigm to understand how caregiver responses to stressful infant situations give way to different regulatory strategies, which impact on the effectiveness of the stress buffer systems and its physiological impact on emotion and stress regulation. This paper underlines the importance of synchronization between infant and caregiver; it highlights the key concept of attachment disorganization and of its relationship with sustained social withdrawal as a defence mechanism and an alarm signal when synchronization fails, and underlines the importance of early interventions promoting parent–infant synchrony.

"Babies can't wait".
Selma Fraiberg, Clinical studies in infant mental health, 1980.
"Nothing lasts, and yet nothing passes either.
And nothing passes just because nothing lasts".
Phillip Roth, The Human Stain, 2002.

1. Babies and time

Infants are highly sensitive to violations of rhythms and to contingency within the infant–caregiver interaction (Cohn and Tronick, 1987). To quote the Greek philosopher Chrisippe, 'Only the present exists' and this seems to be particularly true for the infant. When infants are faced with repetitive violations of interaction synchronization (Weinberg and Tronick, 1994), they find themselves excluded from the present. Early in life, infants do not have sufficient acquired memory content to retrieve representations of a good caregiver. They have no other solution than to withdraw from the present. Sustained relational withdrawal behavior marks a suspension in time, far from a truly depressive position in the Kleinian sense of the term (Guedeney, 2007a,b). Relational withdrawal behavior is the infant's way of handling repetitive or durable violations of the expected synchrony within parent–infant relationships (Puura et al., 2010).

2. Synchrony in the first year of life

2.1. Role of parent–infant synchrony on social and emotional development

Social and emotional development in early infancy is today recognized as crucial for all aspects of functioning throughout the lifespan (Brazelton et al., 1974; Sroufe, 1995). The infant's ability to relate to and understand the social world develops through close and continuous interactions with his/her parents. Different factors can have a deleterious effect on early infant social and emotional development: premature birth or illness *in utero*, genetic risk

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factors or psychosocial risk factors such as living in inadequate or inappropriately stimulating environments, early disruptions in the parent–child relationship and inadequate parental care (Spitz, 1946; Fraiberg, 1982; Lyons-Ruth et al., 1999a,b; Feldmann, 2007). Parental mental illness poses also a risk for infant attachment as well as the child's social and emotional development (Field, 2001; Murray and Cooper, 1997; Teti et al., 1995). The influence of risk factors on infant development depends on the qualities of both the parent and the child, which together determine the mutual adaptation capacity of the dyad (Mäntymaa, 2006) and its capacity to build parent–infant synchrony within the first 18 months of life (Feldmann, 2007). Successful synchrony is the basis for learning to play, understanding other peoples' repertoire of actions and reactions, using symbolic exchange, and the ability to empathize (Feldmann, 2007; Stern, 1985; Tronick and Cohn, 1989; Trevarthen and Aitken, 2001). Synchrony is an essential ingredient in the predictability of caregiving, key feature of secure attachment in early relationships with the parent (Bowlby, 1969, 1973).

Defined as the temporal coordination of micro-level social behavior, parent–infant synchrony develops through the early childhood years, from biological rhythms during pregnancy through to later symbolic exchange between parent and child.

2.2. Synchrony and physiological mechanisms

Synchrony is seemingly linked to physiological mechanisms such as those involving the oxytocin hormone which plays an important role bonding between mammals. Synchrony is a feature of the dyadic system and thus may be compromised by risk conditions in either the mother or the child (Tronick and Cohn, 1989; Feldmann, 2007). Prematurity as a child-related risk and maternal depression as a mother-related risk are the two conditions that have received the most empirical attention to date. Within attachment theory, synchronization plays a major role with the concept of sensitivity of the caregiver response to infant stress. During Ainsworth's Strange Situation procedure (Ainsworth et al., 1978), measuring heart rate variability and cortisol level clearly shows the buffer role of attachment (Spangler and Grossmann, 1993). Moreover, the more the mother–child dyad is secure, the more their heart rates are synchronized (Zelenko et al., 2005).

3. Attachment disorganization and parent's disorganizing behavior

3.1. The attachment system and the regulation of fear

Selma Fraiberg was probably the first mother–infant psychotherapist to emphasize the importance of fear and loss in disturbed mother–infant interactions (Fraiberg, 1981). Since then, developmental psychology has emphasized the importance of the regulation of fear arousal as one of the major tasks during infant development. This issue is particularly crucial for attachment theory. Attachment theory holds that humans are born with a strong, evolved tendency to seek care, help and comfort from members of the social group whenever they are faced with danger or are suffering from physical or emotional distress (Bowlby, 1969, 1973). The attachment system, although more often active during infancy and childhood, is operative throughout any human being's life and is powerfully activated during and after any experience of fear, physical or psychological pain or uncertainty (as, for instance, during the transition to parenthood). Within this focus on fear arousal, attachment research has shed light onto the development of the infant's defensive adaptations to a caregiver's inability to provide the needed soothing responses to infant fear or distress. During the many interactions with his/her attachment figure, the infant builds an Internal Working Model (IWM) of attachment with each of attachment figure (Bowlby, 1969). These primary IWMs are revisited and new ones are internalized according to the cognitive development of the child and his or her new relational experiences, although initial IWMs may be elicited if the stress is too severe (Mikulincer and Shaver, 2007).

3.2. The caregiving system

The caregiving system is another pre-adapted psychosocial mechanism, functioning in tandem with the attachment system in helping infants regulate fear arousal and develop their competencies (Bowlby, 1973; George and Solomon, 1996). The adult/caregiver provides proximity and comforting interactions to their offspring. The only way of deactivating the caregiver's caregiving reaction is to establish or maintain proximity with their suffering infant. Although the caregiving system is influenced by the caregiver's attachment system, it does not overlap with it exactly. Many influences can directly impact on the caregiving system: biological hormones, life events, psychiatric status, the attachment relationship with the partner, the level of stress and the infant's cues (George and Solomon, 2008). Both attachment and caregiving systems can be considered as co-evolutionary systems of care-giving and care-seeking (George and Solomon, 2008).

3.3. Intergenerational transmission of disorganized attachment

The two models of transmission described on the one hand by Main and Hesse (1990) and, on the other hand, by Solomon and George (1999) and Lyons-Ruth et al. (1999a,b) are known as the first and the second generation effects, respectively.

3.3.1. The traumatic experience of fear or loss: The first generation effect

For Hesse and Main (2006), a mother can present an unresolved trauma related to attachment, associated with non integrated affects (fright, sadness and anger). The mother's psychological state will most likely not allow her to repair the mismatches. Elements of the traumatic experience are not integrated as a whole but rather stored as isolated fragments of sensory perceptions of affective states; these memories can be abruptly and easily activated by stimuli associated with the traumatic event. They may disrupt attention and parental behavior in the form of absorption and unmonitored intrusions of memories, affects and sensory perceptions concerning the trauma (Hesse and Main, 2006). These odd maternal behaviors have been described by Main and Hesse (1990) as frightened or frightening dissociative behaviors which are parallel to the usual reactions to intense fear or stress, i.e. fight, flight or freeze. This dissociative mechanism has been analyzed as underlying the *ghosts in the nursery* phenomenon, resulting from unresolved traumatic attachment experiences of the caregiver (Fraiberg, 1981).

The key point is that, because of these reactions, the mother becomes both the soothing attachment figure and the source of alarm. The infant is exposed to an experience of fright without solution (Main and Hesse, 1990).

3.3.2. The mother as an infant: the second generation effect

The infant of a disorganized parent will try to organize strategies to develop control over his/her caregiver (Solomon and George, 1999). By age 3–5 (this phenomenon can be observed even earlier), many children having previously shown disorganized attachment patterns will develop alternative strategies for involving emotionally distant parents, such as punitive attachment behavior with regard to the caregiver or to the contrary, with