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The significance of infant research for psychoanalysis

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Psychoanalysis and infant research have strengthened cooperation in the current interdisciplinary dialog. The theoretical significance of infant research for psychoanalysis includes the consideration of individual “sociality” from birth, as opposed to the traditional psychoanalytic hypothesis of the “autistic” infant; such research creates openness in existing psychoanalytic mental models. It can also provide reliable evidence for the early development of various abilities and childhood amnesia, support psychoanalysis beyond linear causality, and create a framework for the theoretical integration of psychoanalysis. Infant research for psychoanalysis may present evidence of the healing effect of analyst–client relationships, encourage analysts to prioritize nonverbal information during treatment, and create opportunities for new psychoanalytic therapy technologies.

“Marriage” of psychoanalysis and infant research

Childhood is the most wonderful period in one’s life. The child then is a flower, a fruit, dim intelligence, an endless activity and a burst of strong desire.

--Honoré de Balzac

Childhood plays a crucial role in the theory and practice of psychoanalysis. Sigmund Freud associated childhood trauma with the joys and sorrows of adults, arguing that childhood is a decisive factor in individual development and thus reveals human personalities and culture (Seligman, 2018). Almost all analysts¹ agree with Freud regarding childhood as a core issue of theory and practice. For example, for Virginia Ungar, “without the notion of the infantile, psychoanalysis simply would not exist” (Tanis, 2021, p. 572). Some analysts have focused on the preoedipal phase², believing that the preverbal infant determines the construction of adulthood development (Mitchell, 1988). Some terms in psychotherapy, such as the “family of origin” and the “child within,” are closely related to the tradition of psychoanalysis. Accordingly, many treatment techniques (e.g., the exploration and interpretation of transference, resistance, and defense) are based on this hypothesis (Lichtenberg, 2013).

Notably, research on infants in developmental psychology has not been paid adequate attention by analysts for a considerable time; however, several researchers (e.g., John Bowlby and René Spitz) have played a pioneering role in the dialog between the two fields. This kind of interdisciplinary communication increased in popularity in the 1970s and has been researched extensively since (Seligman, 2018). Today, infant research is an indispensable part of psychoanalysis. Scholars such as Daniel Stern, Louis Sander, Joseph Lichtenberg, Allan Schore, Beatrice

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Beebe, Frank Lachmann, and Peter Fonagy have effectively combined achievements across cognitive neuroscience, dynamic system theory, and other fields to create an in-depth interdisciplinary dialog of psychoanalysis.

Why is the “marriage” between the two fields so tortuous? An important reason is that developmental psychology emphasizes empirical research, whereas psychoanalysis focuses on the significance of subjective experiences (Fonagy, 2001). In this context, Stern’s (1998) distinction between the clinical infant and the observed infant is important. The clinical infant emerges from a co-construction of the analyst and the client—the materials presented by the client during treatment (e.g., dreams, free association, transference, and resistance), and the analyst’s interpretation. The “story” told by the client is not factually accurate as much as it is discovered and modified by the client and the analyst in tandem (Stern, 1998). While subjective experience (particularly fantasy/phantasy) is given great importance, the internal worlds of clinical infants can be described as “full of drama” by psychoanalysts. A prominent example is the baby conceived by Melanie Klein, who suffers from aggressive drives and destructive impulses; in the “tug of war” of paranoid–schizoid and depressive positions, he or she is afraid of the “bad breast,” close to the “good breast,” extremely disappointed in the “good and bad mother,” hates and seeks revenge on the mother, and takes the initiative to repair objects after regretful actions (Mitchell and Black, 1995). Consequently, this retrospective method verbalizes many “thoughts” for “speechless” babies (Canestri, 2021) and is highly speculative. Even when utilizing the same clinical materials, analysts with different theoretical backgrounds apply various techniques to obtain the life histories of their clients (Stern, 1998).

By contrast, the observed infant originates from researchers’ direct observations and descriptions of an individual’s early life, including infant limb movement, head-shaking, smiling, and crying. The observed infant is largely a collection of external observations (Stern, 1998). Lichtenberg (2013) regarded this method of studying infants as a “bottom-up” approach as opposed to the “top-down” model of the clinical infant (i.e., inferring infants from adults). Fewer components of speculation and construction and more consistent data across various researchers exist about the observed infant than the clinical infant, although researchers cannot obtain wholly neutral and objective observations according to “observance [is] permeated by theory”³ (Hanson, 1958). However, the observed infant cannot live the subjective experience of infants; thus, revealing the psychological structure at a higher organizational level poses a challenge (Stern, 1998).

Despite these differences, the observed infant and the clinical infant can form a complementary relationship: the former provides the basis for theoretical construction, whereas the latter gives subjective life to the former. When analysts are more familiar with the observed infant, they can help their clients establish more appropriate life narratives. Conversely, infant researchers are more likely to discover new observational perspectives when they are more familiar with the clinical infant (Stern, 1998). This complementary view can be regarded as an organic combination of first- and third-person perspectives. However, as mentioned by Stephen Mitchell, some researchers refuse to contradict Freud and instead attempt to reconcile with his strategy by placing the modern baby (i.e., the observed infant) simply before Freud’s bestial baby⁴ and then dividing the development process into two parts—the preoedipal and oedipal phases. In the preoedipal phase, individuals follow the developmental logic of the observed infant and strive to seek relations; in the oedipal phase and beyond, individuals follow the developmental path of the bestial baby and struggle with instinctive impulses and inner conflicts. Representative examples include the

remolding of the ego by Hartmann, the remolding of the id by Jacobson and Kernberg, and the selective use of diagnosis by Kernberg, Kohut, Stolorow, and Lachman. However, this approach creates contradictions within the theory (Mitchell, 1988). Many contemporary analysts agree that an openness to the achievements of infant research, alongside the deft integration of the two fields, can facilitate the most effective psychoanalysis.

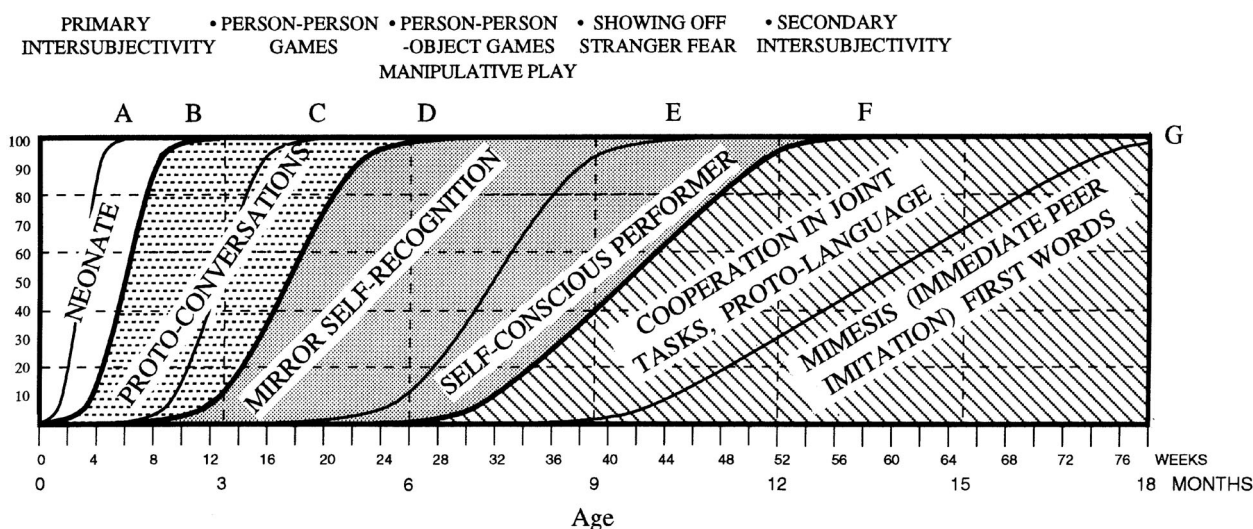
This article starts with the current infant research outcomes, elaborates on their theoretical and clinical significance for psychoanalysis, and promote the dialog and communication between the two fields.

Theoretical significance of infant research for psychoanalysis

Studies vary in focus, but infant research generally influences the theory of psychoanalysis in the following aspects.

First, infant research reveals that individuals are socialized from birth, instead of the traditional psychoanalytic hypothesis that babies are “autistic.” Both Freud’s “stimulus barrier” (Freud, 1920) and Mahler’s “normal autism” (Mahler et al., 2000) emphasize that the baby maintains a relatively isolated state from the outside world for about one month after birth. In their view, infants have no psychological ability to manage large numbers of external stimuli; thus, this autistic state protects them from harassment as they focus on their inner world. Meltzoff and Brooks (2007) referred to this view as “the myth of the asocial infant” (p. 150). However, infant research shows that babies have multiple abilities to adapt to the world from birth (even before birth) (Dornes, 1993/2018; Trevarthen, 2011). Consequently, individuals show great interest in the world shortly after birth and use various periods of “gap time” to learn and actively obtain stimulation to achieve growth (Palombo, 2013). Erikson even used the word “fierce” to describe the eager eyes of infants encountering the world. Briefly stated, this “stimulus barrier” or “normal autism” does not actually exist (Stern, 1998).⁵

With their openness to the world, new babies are immediately connected with others. According to Winnicott (1964), “There is no such thing as a baby... A baby cannot exist alone, but is essentially part of a relationship” (p. 88), and according to Benjamin, for an infant, “I am who makes mommy smile; mommy is who makes me smile” (Magid and Shane, 2017, p. 5). This perspective is supported by numerous infant researchers. Meltzoff, Trevarthen, and others indicated that babies interact with other humans by tongue extension, mouth opening, pouting, finger-pointing, smiling, and showing surprised expressions; further, they control these actions in time, form, and intensity within only a few hours after birth (Beebe et al., 2003). This innate ability to relate to others is called “primary intersubjectivity,” which can be realized without mastering language (Meltzoff and Brooks, 2007; Meltzoff et al., 1999; Trevarthen, 2011; Trevarthen and Aitken, 2001). Stern (1998) considered this type of matching as not merely an explicit behavior but rather one corresponding to affective states—that is, “affect attunement.” The infant can understand the internal emotional states of others and assess whether the states can be shared. With the maturation of the infant physiological function and the accumulation of parent–child interaction experience, secondary intersubjectivity has gradually developed (see Fig. 1). This ability involves a “person–person–object” game in which people share objects with one another (Trevarthen, 2011; Trevarthen and Aitken, 2001). In this process, if the baby starts using language, the process of sharing intentions in a dyadic interaction increases in complexity and diversity (Stern, 1998). On this basis, Beebe and Lachmann (2002, 2014, 2020) further found that infants experience interactive regulation with their mothers from birth, with expectation as the intermediary variable. At this point, even some one-person psychology-oriented analysts (i.e., those focusing on the



- A** Regulation of sleep, feeding and breathing. Innate “pre-reaching”. Imitation of expressions. Smiles to voice.
- B** Fixates eyes with smiling. Protoconversations. Mouth and tongue imitations give way to vocal and gestural imitations. Distressed by “still face” test.
- C** “Person-Person” games, mirror recognition. Smooth visual tracking, strong head support. Reaching and catching.
- D** Imitation of clapping and pointing. “Person-Person-Object” games. Accurate reach and grasp. Binocular stereopsis. Manipulative play with objects. Interest in surroundings increases.
- E** Playful, self-aware imitating. Showing off. Stranger fear. Persistent manipulation. Babbling and rhythmic banging of objects. Crawling and sitting, pulling up to stand.
- F** Cooperation in tasks; follows pointing. Declarations with joint attention. Proto-language. Clowning. Combines objects, executive thinking. Categorises experiences. Walking.
- G** Self-feeding with hand. Beginning of mimesis of puposeful actions, uses of tools and cultural learning. May use first words.

Fig. 1 Development of intersubjectivity (Trevarthen and Aitken, 2001, p. 11). **a** Top (several main transition periods from primary intersubjectivity to secondary Intersubjectivity). **b** Below (the alphabets A to G illustrate the specific performance of infants in motor coordination, perception and communication during these transitions).

intrapersonal rather than interpersonal dimension) in contemporary psychoanalysis use this dyadic view of infant research to modify their theoretical assumptions (Litowitz, 2021). In the words of Fonagy (2001), the sociality of infants has become a self-evident truth of developmental psychology.

Second, infant research provides a basis for openness in the psychoanalytic model of the mind. Freud repeatedly referred to the unconscious communication between two individuals as “telepathy” (Gerson, 2004); his descriptions of transference and counter-transference also imply this kind of information transmission at the unconscious level. However, his mental model has no actual place for such a mode of communication because consciousness is the outer shell of contact with the outside world—information from the outside world must pass through consciousness to enter the unconscious. “In Freud’s concept, before material could be repressed, it had to be in the explicit domain, that is, in the preconscious or conscious domains” (BCPSG, 2007, p. 13)⁶. In this way, the unconscious communication between different individuals cannot be explained. At this point, Stolorow et al.’s criticism of Freud’s mental model as a Cartesian “isolated mind” is understandable

(Jaenicke, 2008; Stolorow et al., 2002). To a certain extent, Freud can be said to have “missed” the unconscious level of communication.

Unlike Freud’s (1917) conception, direct communication at the unconscious level does not replace phylogenetic evolution; instead, it is preserved as a very important form of interacting with others throughout one’s life. This approach is roughly equivalent to nonverbal communication in infant research (BCPSG, 2010; Beebe and Lachmann, 2020) and is supported by significant evidence, including the previously described matching and affect attunement. Correspondingly, what Sullivan (1953) calls “empathic linkage” and what Mitchell (2000) refers to as “affective permeability” result from emotional communication at the unconscious level. Some researchers call this “mind-to-mind communication” (de Peyer, 2016) or “right brain-to-right brain communication” (Schore, 2011). As is common in mother–child interactions, “Between infant and parent in the first year, there is a dance of right-brain-to-right-brain communication essential to optimal neural development and the achievement of secure attachment, affect tolerance, and affect regulation” (McWilliams, 2004, p. 45). Similarly, in interactions between adults, more than

50% of interpersonal communication is nonverbal (Matsumoto et al., 2016; Westland, 2015).

The openness of the mind is the factor that allows different individuals to co-share experiences. In the current intersubjective turn⁷ of psychoanalysis, many two-person psychology-oriented analysts emphasize the “in-between” area, which belongs neither solely to the analyst nor solely to the client but is co-created by the analyst and the client (or the mother and the infant), such as *bi-personal phantasy*, *bi-personal field*, *intersubjective field*, *relational unconscious*, and *the third* (Bohleber, 2013). This series of terms describe the co-created and co-shared experiences of both sides, which are inevitably intertwined. The concept has provided an impetus for psychoanalytic therapy; infant research supports these views and plays an essential role in the modern switch toward intersubjectivity.

Third, infant research provides evidence for acquiring various abilities in interaction. Among Freud’s successors, some analysts (e.g., object relations theorists, self psychologists, and interpersonal analysts) paid attention to the importance of the acquired environment—that is, only if the baby requires certain basic environmental conditions and parental functions (e.g., holding, containment, mirroring, and the opportunities for a symbiotic merger, separateness, and idealization) can he grow and develop healthily (Mitchell, 1988). In this regard, infant research provides a large volume of vital evidence. The following are several important aspects: (1) *Body management skill*. In the traditional view of psychoanalysis, the development of the individual’s internal world is the primary. Physiological needs, such as hunger, excretion, and sleep, have their own periodicity and are only regarded as the physiological basis of attachment motivation or sexual drive (Lichtenberg, 2013). However, studies have shown that the day–night differentiation and the sleep–wake cycle of infants are usually formed within 10 days after birth; by contrast, those abandoned after birth have difficulty forming these patterns. This physiological cycle cannot be formed within 10 days until they interact with their caregivers after adoption (Beebe and Lachmann, 2002). In addition, the development of abilities to adjust physical activities (e.g., nutrients, elimination, breathing, equilibrium, and proprioceptive movements) entirely depend on the careful feeding of caregivers. In Lichtenberg’s theory, this body management skill depends on “the motivational system based on the psychic regulation of physiological requirements,” which is inseparable from the overall operation of “infant–caregiver” (Lichtenberg, 1989, 2013). (2) *Emotional regulation ability*. Some analysts have discussed the development of emotion regulation ability. In Bion’s conception, initially, babies cannot regulate emotions. A baby carrying negative emotions (e.g., pain and anxiety) can learn self-regulation only when the mother acts as a container, plays the function of containment, and returns the processed experience to the baby (Bion, 1962). Similarly, Kohut (1977, 1984) emphasized that only when the caregiver empathically responds and appropriately meets the needs of mirroring and idealization can the baby develop the ability to endure and adjust to shame. On the basis of Kohut’s work, Stolorow cited that the mother’s attuned response promotes the integration of the infant’s emotional experience and symbolic thinking, allowing the infant to express this experience in the language (Stolorow, 2006). He then described the process with “emotional dwelling” (Stolorow, 2013, 2014). In this regard, a large amount of evidence from infant research shows that individuals’ emotional regulation ability is learned from parent–child interaction (Beebe and Lachmann, 2002, 2014; Schore, 2011). Moreover, a key point is that the mother’s response to the baby is not a simple “copy” or “imitation” but must contain a personal mark to convey “I understand you” and “I respond to you.” For instance, when the baby expresses anxiety, the mother gives back to the baby both the emotion corresponding to anxiety (e.g., fear, which means “I

understand you”) and another incompatible emotion (e.g., ridicule, which means “there’s nothing to worry about”). This experience, both similar to and different from infants’ emotions, helps infants develop the ability to represent anxiety and further self-regulation (Fonagy, 2001; Wallin, 2007). (3) *Ability to transform nonverbal experience into language*. Some analysts have significantly contributed to describing nonverbal experiences. For example, in Bion’s conception, nonverbal experience is described as a beta-element—a sensory impression derived from the original emotional experience generated by internal and external environmental stimuli, and a sensory impression of emotional experience rejected for processing due to psychological catastrophe. Beta-elements are in a state that cannot be thought, bear no meaning, and cannot be expressed by language. They can be transformed into alpha-elements that can think and convey meaning only through the mother’s containment (or alpha function). Bion also describes this process by using the digestive tract as a metaphor—that is, food (beta-elements) can only be transformed into nutritional raw materials (alpha-elements) for various functions of the body after being digested, and the processes of “digestion” and “absorption” are processes of alpha function operation (Bion, 1962). Similarly, Stern (2019) uses “unformulated experience” to describe an individual’s nonverbal experience, which consists of a huge space of feelings, perceptions, and thoughts. These experiences are comparable to a figure emerging from a thick fog; despite the presence of an outline, the figure is considerably vague. If the individual fails to express these experiences in an appropriate language, they cannot be perceived by the individual, which is a defense mechanism; if the individual finds appropriate words to describe these experiences, the experiences can be elaborated and formed into the individual’s awareness, thus providing an opportunity for the transformation of traumatic experiences. In addition, terms such as “unvalidated unconscious” (Atwood and Stolorow, 2014; Stolorow and Atwood, 1992), “the under-represented” (Busch, 2013), “unsymbolized experience” (Bromberg, 1998), and “unmentalized experience” (Mitrani, 1995) also express similar meanings. In infant research, terms such as “presymbolic representations” (Beebe and Lachmann, 2002, 2014), “implicit relational knowing” (BCPSG, 2010), “emotion schemas” (Bucci, 2011), “internal working models” (Fonagy, 2001; Wallin, 2007) and “representations of interactions that have been generalized” (RIGS) (Stern, 1998) express similar meanings. On the basis of experimental evidence, these infant researchers indicated that infants initially have presymbolic and nonverbal representations. In the interaction between the infant and the caregiver, these experiences are gradually endowed with meaning, thus transforming preverbal experiences into symbolic and verbal representations.

Fourth, infant research provides a reliable answer to questions regarding childhood amnesia, a common phenomenon whereby individuals fail to recall early-life events (usually before the age of 3–5 years). Clinical experiences wherein children could not remember their experiences before they turned 6–8 years were referred to by Freud (1916) as suppression of the sexual experience before the latency period or “screen[ed] memories”. He thought that through analytic sessions, repression could be relieved and recalled to the level of consciousness. Other analysts have further linked this memory loss to various childhood traumas (Christianson and Lindholm, 1998). However, studies have shown that childhood amnesia may not be due to repression. The hippocampus of a child younger than 1 year old is not yet active; thus, previous experiences can only be implicitly encoded (Rustin, 2013; Siegel, 2012). Therefore, this part of human experience does not readily reach the level of consciousness even as individuals mature. As a baby’s explicit memory gradually develops, numerous experiences do indeed rise to the level of consciousness. With the maturity of all aspects of body and mind (e.g., the

use of language) and the elucidation of the world and others, the duration of memory is gradually extended. Individuals around the age of 2 years can even remember what they experienced more than 1 year prior. However, in the early stages of growth, a portion of brain neurons is more closely connected than it will be later in life, and numerous less commonly used neurons are cut to optimize brain function. Under the effect of this “sweeping,” the early immature brain drastically changes, and many experiences are abandoned because of their “uselessness” (Shaw, 2016). Compared with Freud’s “repression theory,” this “simplification theory” is more likely the root cause of childhood amnesia.

Research on memory also supports the effect of childhood trauma on adulthood. The unconscious memory is influenced by several factors in accessing consciousness: (1) whether the memory was originally created via explicit processing, as memories that begin with explicit attention are more accessible to consciousness; (2) the age of encoding, as being too young or too old is not conducive to extracting relevant memories; (3) the intensity of affects, as too low or too high intensity impedes extracting memory; (4) the frequency of repetition, as repeatedly and skillfully extracted memories are easier to continue to extract; (5) dissociation, which affects conscious perceptions; and (6) the intersubjective context, as a similar intersubjective background is conducive to awareness (Fosshage, 2011). As previously mentioned, early infants primarily rely on bodily movements to complete their exchanges with others. Even after gradually mastering the language, procedural memory still considers the majority. In addition, children have limited cognitive ability and a reflective ability (or metacognition) often weaker than that of adults. These qualities imply that if immature children are traumatized during this period, the traumatic memories cannot be reflected upon, mitigated, or healed through conscious reflection. Therefore, trauma is more severe and causes more harm to the individual the earlier it occurs. This claim has been substantiated by a number of retrospective studies and prospective infant research (Schore, 2011; Seligman, 2018).

Fifth, infant research supports the quest of psychoanalysis to transcend linear causality. Numerous traces of classical physics are found in Freud, endowing his theory with considerable linear causality (Palombo, 2013). To illustrate, Freud believes that in individual development, unresolved conflicts in the oral stage lead to problems of diet or alcohol abuse; conflicts in anal-stage development lead to obsessive-compulsive disorder, stinginess, and anal erotism; if the phallic phase does not pass smoothly, symptoms such as masturbation, pregnancy fantasy, and the concept of sadistic intercourse related to parents arise (Delgado et al., 2015). This theory of predetermination has influenced many analysts, yielding different forms of developmental stage theory (e.g., the normal autistic, symbiotic, and separation-individuation stages as classified by Mahler; the origins of schizophrenia, psychosomatic disorders, borderline personality organization, learning disabilities, and homosexuality) where babies mature over a fixed developmental trajectory (Gilmore, 2008). In addition, Freud’s psychological determinism and the viewpoint that the Oedipal conflict is the repetition of human ancestral behaviors reflect a linear, causal relationship (Palombo, 2013).

Today, many infant researchers prefer a more complex non-linear causality. In their view, interactive partners form an inseparable dynamic system. In the interrelated feedback loop, each party is both the “cause” affecting the other party and the “result” affected by the other party. This link was referred to as “co-constructing interactions” by Beebe and Lachmann, who analyzed the interactive regulation in mother-infant relationships from different dimensions—time (e.g., turn-taking), space (e.g., chasing and dodging), and emotion (e.g., facial mirroring) (Beebe and Lachmann, 2020, 2002). They further described the complex interactive landscape of dyads with different attachment styles

from five dimensions (i.e., visual attention, facial and voice affect, facial visual participation, touch, and orientation) (Beebe and Lachmann, 2014). Similarly, BCPSG (2010) used various terms in dynamic system theory, such as *attractor*, *repellor*, *self-organization*, *emergence*, *chaos*, and *bifurcation*, to describe these complex interactions and their new attributes (e.g., interactive modes and subjective experiences). This *sloppiness* involves redundancy, variability, improvisation, unpredictability, and co-creativity in interactions. In the specific space-time context, child development is intertwined with other factors and becomes more complex and diverse with age. Consequently, individuals do not develop along a specific progression and instead constantly generate changes through processes (e.g., self-regulation and interactive regulation). Various “maladjustment symptoms” in adulthood do not precisely correspond to early-childhood defects (Palombo, 2016) but are based on the continuous reconstruction of early experiences (Gilmore, 2008).

Finally, infant research provides a compatible framework for the theoretical integration of psychoanalysis. In the context of the intersubjective turn, some analysts advocate a “both/and” position, considering the intrapersonal and interpersonal dimensions; others support an “either/or” position, mainly ignoring the intrapersonal dimension while attaching importance to the interpersonal dimension (Schwartz, 2012; Wallerstein, 1998). On the basis of Mitchell’s theory, Beebe and Lachmann proposed a dyadic system model that considers the intrapersonal and interpersonal dimensions (Beebe and Lachmann, 2002). As shown in Figs. 1, 2 the model includes (1) two subjects, the mother and the infant (or the analyst and the patient); (2) two modes of influence, self-regulation and interactive regulation; (3) two kinds of communication, verbal and nonverbal; and (4) two tenses, historical and current modes. The model incorporates the views of several analysts. Among the analysts, Benjamin mainly emphasizes the subjective experience of the client to the analyst; Jacobs, Stolorow, and others stress the subjective experience of the analyst to the client; Ogden focuses on the analyst’s own subjective experience; and Ehrenberg emphasizes an experience whereby the two sides “break through the boundary” during more intense interactions (Beebe et al., 2005). Thus, the Beebe and Lachmann model is arguably a foundation for the further theoretical integration of psychoanalysis.

Practical significance of infant research for psychoanalysis

Infant research has also affected the clinical practice of psychoanalytic treatment. First, it has provided evidence for the healing effects of the therapist-patient relationship. Freud’s theory suggests that the content of the unconscious does not change with the passage and has “timelessness” (Noel-Smith, 2016). Therefore, in the analytic session, transference is regarded as a complete repetition of the past. This view was referred to by Wachtel (2003) as the “woolly mammoth model” in which the early traumatic experiences of the client “are...essentially frozen in time, preserved in their original form like woolly mammoths buried in the arctic ice, prevented from changing and evolving over the course of development” (p. 22). Accordingly, only when the content of the unconscious is brought to the level of consciousness can one lift timelessness from their experience to reshape it (Delgado et al., 2015).

However, whether it is the implicit affect regulation between the mother and the infant (Schore, 2011), the interactive regulation described by Beebe and Lachmann (2002, 2020), or interactions changing the implicit relational knowing as described by BCPSG (2010), individuals are indeed shaped by current interactions. The changes brought about by such interactions are particularly obvious in special moments, such as moments of meeting (BCPSG, 2010), heightened affective moments, and moments of rupture and repair (Beebe and Lachmann, 2002).

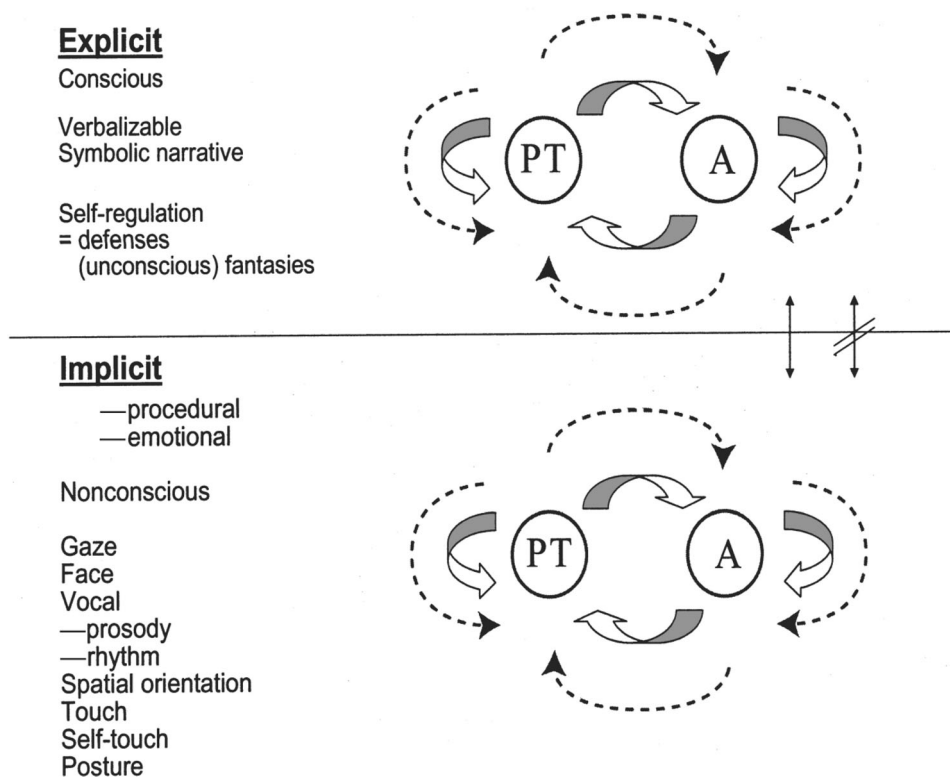


Fig. 2 Dyadic system model proposed by Beebe and Lachmann (2002, p. 35). Graphic: **a** Self-regulation (arrow pointing at oneself). **b** Interactive regulation (arrow from a subject to the other subject). **c** Current mode of regulation (solid line), historical mode of regulation (dotted line). **d** “Verbal” and “nonverbal” roughly corresponding to “explicit” and “implicit”. **e** Verbal and nonverbal areas that can be converted back and forth if necessary, with a connection that may be blocked when communication is difficult (severed two-way arrow).

Research on cognitive neuroscience also suggests that memory does not entirely “copy” a group of contents into the “internal storage” and “hard disk” of the brain but encompasses a dynamic constructive process. In the process of recall, we do not simply “read” the fixed information stored in the brain beforehand; we reshape the neural network and reorganize the memory (Rustin, 2013; Siegel, 2012). “This is particularly likely to happen when affective arousal is strong, but not too strong” (Seligman, 2018, p. 102). The present, to this effect, is not a complete repetition of the past. Transference and countertransference are reshaped in the current interaction. In a solid therapeutic relationship, the former nonadaptive interaction mode of the client can thus be changed.

Second, infant research has also led analysts to carefully consider nonverbal information in the treatment. In classical psychoanalysis, the analytic session is regarded as a kind of “talking cure”: the client mainly carries out activities (e.g., free association) on the couch and reports the materials emerging in his or her mind to the analyst. In this process, little nonverbal communication occurs between the analyst and the client (Delgado et al., 2015). In the long history of psychoanalytic movement, the role of nonverbal information in theory and practice has been generally ignored although sporadically mentioned by some researchers (Jacobs, 2005). However, driven by infant research, the “non-talking cure” has drawn increased attention and become a major trend in contemporary psychoanalysis (Kirshner, 2017). In this regard, Schore (2005) suggested that the “communicating” cure is more suitable than the “taking” cure—that is, the analytic session covers a broader range of verbal and nonverbal parts. In summary, the main ways to promote psychoanalytic therapy through nonverbal information includes the following: (1) The analyst can increase face-to-face communication with the client, where the client reveals

thoughts and feelings to the analyst nonverbally. For instance, stiffness, shivering, and pallor may indicate the fear of speaking out or the desire to prevent “re-experiencing” the trauma under analysis. (2) Analysts can also express themselves nonverbally and create a safe environment for therapist–patient interaction by using nonverbal cues, such as a warm, gentle smile (Rustin, 2013). (3) The analyst may also encourage clients to perceive their own nonverbal behaviors and provide materials accordingly. For instance, Busch (2017) helped a client, “Ms. A,” to connect her physical symptoms with emotional states and stressors to realize implicit anger and understand internal conflict, ultimately allowing her to meaningfully express herself. (4) The analyst can also understand his or her own countertransference experiences via their own nonverbal information, thus laying a foundation for interaction. For example, Abbasi (2018) obtained a deep understanding of a client by factoring in the physical discomfort (e.g., nausea) underlying his anger and provocative behavior, thus strengthening the empathetic response with the latter.

Finally, infant research has contributed new techniques for psychoanalysis. Advancements in science and technology have allowed researchers to utilize video technology for a microanalysis of therapist–patient interactions. Real-time changes in therapy are difficult to capture and explain, but noteworthy information can be easily gathered by reviewing video footage with the permission of the client. At this point, Beebe et al. conducted experiments during treatment to analyze the nonverbal communication between the analyst and the client. In Beebe’s treatment of “Dolores,” facial expressions observed on video indicated that she was closed-off and overly dependent on self-regulation at certain points during treatment. Analysis of the video laid a foundation for enhancing Dolores’s interactions with the analyst,

after which she began to address her maladaptive interaction mode (Beebe, 2005). Similarly, BCPSG (2010) used videos to analyze micro-interactions in child clients, promote reflection in the children, and enhance the supervisory skills of the analyst.

Conclusion

The significance of infant research in psychoanalysis is discussed in this paper from the dual perspectives of theory and practice. However, some analysts do not support the role of infant research in psychoanalysis (Ackerman, 2010). Particularly for those who cling to classical theory, the object of psychoanalysis is the unconscious process that cannot be directly observed (Lichtenberg, 2013; Zeuthen et al., 2010) despite the fact that empirical research supports the role of early-childhood experiences in a way different from classical psychoanalysis. However, with the historical rise and fall of psychoanalysis in mental health in the United States (see Safran, 2012) considered, cooperation and communication between psychoanalysis and other fields should be strengthened. In this regard, infant research undoubtedly provides an important source of interdisciplinary dialog. As to the direction that these resultant force of these forces will take, we need to wait and see.

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Notes

- 1 In this paper, the terms “analyst” and “therapist” are used interchangeably as are the terms “client” and “patient.”
- 2 The Oedipal phase is a key period in Freud’s theory during which children are involved in a triangular relationship with their parents. If boys successfully overcome the Oedipus complex and girls successfully overcome the Electra complex, they form a well-functioning superego and lay the foundation for the subsequent smooth development.
- 3 “Observance permeated by theory” is a proposition by Norwood Hanson, a philosopher of science. He points out that when we do not have the relevant knowledge of biology, we see only messy lines and strange shapes under the microscope; with a biological background, we see the cell membrane, nucleus, and cytoplasm. Similarly, philosophers such as Martin Heidegger and subsequently, Wittgenstein, assert that we are inevitably within our specific space–time background, unable to achieve absolute neutrality and objective observation.
- 4 Freud attached great importance to the shaping of babies by instinctive impulses (i.e., the “animal side”), which Mitchell (1988) called the “bestial baby”.
- 5 Mahler’s “normal autism” and “symbiosis” are conceptually helpful to understand some clinical materials; that is, some clients cannot distinguish themselves from others, desire to eliminate the boundary with others, and “merge” with others (Auchincloss and Samberg, 2012; Gergely, 2000). This situation can be understood as one in which an individual dynamically interacts with others. For example, a person hopes to overcome some negative emotions (e.g., anxiety and shame) through defense mechanisms (e.g., idealization and fantasy). In the normal life of an individual, the ability to distinguish between others and themselves, an important manifestation of reality testing, is necessary. However, that it must correspond to an early stage is not a necessary assumption. The idea that maladjustment symptoms in adulthood precisely correspond to early-childhood defects is a linear view of development (Gilmore, 2008).
- 6 The Boston Change Process Study Group (BCPSG) is a research group with multidisciplinary backgrounds of which Daniel Stern and Louis Sander are important members.
- 7 There has been an intersubjective turn in the field of psychoanalysis since the late 1970s, in short, from one-person psychology focusing on the intrapersonal dimension (e.g., classical psychoanalysis and ego psychology) to two-person psychology focusing on the interpersonal dimension (e.g., relational/intersubjective psychoanalysis) (Bohleber, 2013; Kirshner, 2017; Schwartz, 2012).

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Additional information

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