

Bernadetta Janusz

DANIEL STERN'S RESEARCH ON THE FORMATION OF THE SELF IN RELATION WITH THE OTHER AND ON THE CHANGE PROCESS IN PSYCHOTHERAPY. PART I

Jagiellonian University, Collegium Medicum, Chair of Psychiatry,
Department of Family Psychotherapy and Psychosomatics

development of the self
intersubjectivity
change in the process of therapy

Summary

This article aims to present Daniel Stern's concept of the development of the self in the relationship with the caregiver and to describe how the core aspects of the self manifest themselves in the psychotherapy process. Stern's research on the relationship between mother and child inspired him to analyze in detail what happens moment by moment in the therapist-patient relationship. In the paper, the processes of the emergence of the self will be described. These processes involve the development of the young child's self in the relationship with the caregiver and become the basis for experiencing oneself in a relationship with another, including the therapeutic relationship. Awareness of self-development is of particular importance in psychotherapy. The "coming into being" of the patient's self in the relationship with the therapist involves a continuation and evolvement of experiencing the self that emerged in the first months of the child's life. The second part of the paper describes the phenomenon of change in the psychotherapy process. The article emphasizes a "moment-by-moment" relationship with the caregiver that contributes to forming the child's self and the 'realization' of this intersubjective pattern in the therapeutic relationship.

Daniel Stern worked for thirty years as a psychiatrist, a psychotherapist, and a researcher of the developmental processes of small children, as well as the phenomenon of change in the psychotherapeutic process. In his early works, he often stressed that as a psychoanalyst and a psychiatrist he was struck by the fact that although much value was given to the early experiences of children, the knowledge of what is going on in the mental world of a small child [1, 2] was so speculative. In an introduction to one of his books, he wrote that as an adult he had a memory of himself when he was seven and had observed another adult who was trying to communicate with a two or three-year-old child. He seemed to have understood perfectly what the child wanted, but the adult could not grasp it at all: "It seemed to me that I was then in the key moment of bilingualism when I was still able

to understand the language of the child and already could understand the language of the adult” [2, p. IX].

The main perspective that Stern tended to apply in the analysis of interactions between a child and a mother, as well as in the psychotherapeutic process, was the perspective of a detailed microanalysis of interactions. In his works, Stern focused on how the process of relationship between a child, a mother, and a close carer is guided by the whole spectrum of sensory experiences, such as smells, light, and sounds that have an equal share in creating the inner world of a child [2, 3]. The key concept introduced by Stern, the sense of self, which is revived in the relationship, describes how the formation of the mind in childhood manifests itself in adult relations, among other things in psychotherapy [4].

By describing the micro-moments of interaction in a dyad, he paid attention to their complex structure and organization, focusing on its stable and continuous aspects, as well as those transformed in the sequence of interactions. From the perspective of a therapeutic process, it seems to be vital that the structure of the self is both replicated and transformed. Therefore, another question raised by contemporary researchers of the therapeutic process is that of what guides each subsequent action (reaction, utterance) of a therapist and a patient. The basic value of Daniel Stern’s research and systematic observations is that they help us to identify and describe the micro-processes of an interaction between a child and its parents. These micro-processes, due to their repeatability, create a unique internalized pattern of interactions with other people. Conclusions from Stern’s research form the basis for understanding the basic interactive events that introduce a structural change in experiencing the self in the therapeutic process.

Longitudinal research carried out by Stern [2] allowed him to formulate the key assumptions related to the creation of the sense of self. The original and unique contribution of Stern to our understanding of the development of the self is his description of its integration and repeated reintegration. In this way, the sense of self is an entity that is evolving, and yet retains its continuity [5].

Drawing attention to the micro-processes present in a mother-child dyadic relationship later inspired a group of researchers and therapists¹, who for many years have minutely analyzed multimodal interactions between therapists and patients during psychotherapeutic sessions.

The interpersonal world of the infant

The critical publication describing how the infant’s sense of self is shaped in relation to others was the book *The Interpersonal World of the Infant*² [2], published in 1985. Its

¹⁾ Boston Change Process Study Group

²⁾ The following works of Daniel Stern oscillated around the mother-infant interaction. He introduced the notion of *motherhood constellation* [1], which refers to the mother’s instinctual concentration on the infant and her devotion to it, both of which are essential to its development. Stern also introduced the idea of the

key research question was the following: does the preverbal sense of self exist, and if so, how? The results of this research allowed Stern to describe the development of an infant as separate from its mother, i.e. differentiated from the object from the moment of birth. The main conclusion of the research was that a child develops by continuously experiencing itself in relation to others, and the key aspects of the self are present before the era of language and self-reflection. These aspects are the following: a sense of agency, physical unity (coherence), continuity in time, and the sense of intentional mind. At the beginning of his research, Stern made two assumptions, which were later confirmed. He assumed that language and self-reflection are not prerequisites in the constitution of the experience of self, but they create a possibility to express the self that needs to be already there. His other assumption was that language and self-reflection transform or transmute the experience of the self [2].

The key observations of Stern and his group can be summarized by saying that infants begin to experience an emerging sense of self right after birth. Thus, they never exist in an undifferentiated state with the object. From the very beginning, they are predestined to be selectively reactive to external stimuli. From the third month, they become fully-fledged partners of interactions, mainly through the exchange of glances with the mother. This exchange is an important means of interpersonal communication and a way of expressing the infant's self. Regulation of the stimulation level and social contact by means of glancing is a ground-breaking achievement in an infant's development, just like the moment when a child begins to move and regulate its distance from the mother by moving towards and away from her [2, 3].

Application and clinical interpretation of research results on the development of the self

The results of the research presented above clearly indicate that Stern was a clinician. He paid special attention to the aspects/domains of the sense of self, the disturbance of which disables the social functioning of an individual. The chief domains of the self develop successively from the first days of an infant's life. The first domain is the *emergent self* (from birth until the 2nd month), which is the foundation of the sense of influence. If this domain remains underdeveloped, all actions in life become paralyzed and a person is unable to manage his/her activities or loses control over them and hands it over to others. The following three domains of self are developed in the phase called *core self* (2 – 6 months of life). These are the sense of physical coherence, the sense of continuity in time, and the sense of being in touch with emotions. Disturbances in the area of physical coherence result in the experience of bodily fragmentation, depersonalization, derealization,

pre-narrative envelope. This refers to the experience that is organized similarly to narrative experience but is deprived of words or symbols. Its nature can only be observed through the perception of the emotional and motoric strategies that it consists of.

and the experience of remaining outside one's body. Lack of the sense of continuity in time results in dissociations related to time perceptions, such as fugues, amnesias, and the lack of the sense of existence in time. Finally, disturbances of the sense of being in touch with emotions may result in anhedonia and dissociative states. Another domain of self, developing between 9 and 11 months of life, is the subjective sense of self. In this period, an intersubjective relationship with another person is created. This process requires recognition of one's subjective world, recognition of the subjective world of the other person, and an experience that these worlds can be co-shared. It creates a unique opportunity to enter an intersubjective relationship with another person. If the development of this domain of self is disturbed, a person experiences cosmic loneliness, or on the contrary, total transparency. Finally, after the 12th month of life, the development of the verbal sense of self begins. It leads to the domain of the transformation of meanings. Disturbances in this area lead to exclusion from culture, limited socialization, and a lack of appreciation of one's knowledge. However, it needs to be said that Stern tended to focus more on the development of the preverbal phases, and that the verbal phase was studied by him to a lesser degree. According to Stern, all the abovementioned domains of the sense of self create a foundation of the subjective experiences and social development of a person, both normal and disturbed. Therefore, if we learn how the following domains of self emerge, we will be able not only to understand how a small child develops but also understand the genesis of its disturbances, which can be observed in the development of the self in adults. Furthermore, if we are able to learn about the conditions in which the basic domains of the self develop, we get an insight into the processes of transformation of the self that can take place in an interpersonal relationship between a therapist and a patient. This latter aspect was further elaborated in other works by Daniel Stern [2].

The sense of the emerging self

According to Stern [2], the sense of self, in other words the sense of "me", emerges at the beginning of an infant's life. Initially, it exists as a physical self and although it functions beyond consciousness³, it gives an opportunity to experience oneself as a coherent, decisive, self-determined, physical unit with its own unique emotional life and history. By drawing attention to developmental thresholds, Stern stressed the fact that it is after the second month of life that infants begin to smile, enter into short interpersonal exchanges, and begin to babble. Before that, infants seem to remain in a world that is neither socially nor cognitively organized. However, meticulous observation and studies of infants in this period have proved that this is the time when the sense of the *emergent self* is actively

³⁾ By saying that self exists beyond consciousness, Stern meant that it exists of its own accord and is difficult to verbalize.

formed. This does not mean that a stable sense of self is achieved, but that the process of its emergence begins.

In order to understand this stage of the development of the self, Stern introduces the notion of *alert inactivity* [2]. Activities that result from the state of alert inactivity of an infant can be observed through physical activities that go beyond involuntary muscular activity and therefore can be treated as voluntary ones. Behavioral reactions that can be observed right after birth include turning the head (left and right), sucking the thumb, and gazing.

Turning of the head was in this case related to the smell of mother's milk. In this example, Stern refers to the research of MacFarlane, who presented 3-day-old infants with bits of cloth smelling of their mother and of a nurse. Infants always turned their heads towards the one that smelled of their mother [2]. Sucking that was not related to feeding could also be observed in the alert inactivity stage because infants suck everything available including their tongue. In Friedlander's research quoted by Stern, infants tended to activate by sucking the panel of the projector whose intonation and volume resembled a human voice. He also drew attention to the fact that infants have an inborn visual motoric system which in many aspects is already mature. Its maturity can be observed through appropriate focusing on distance when looking, control of eyeball movements that are responsible for fixation on an object, following objects with the eyes, and the preference for symmetry in the vertical dimension.

Stern proposes the following conclusions: 1) Infants look for sensory stimulation in a way that justifies the hypothesis that they have a motivational system; 2) They have specific preferences of stimuli and their perception is oriented; 3) From birth they seem to have a tendency towards "making hypotheses" about the nature of the world around them – "Is this something I know, how much different is it from what I saw before?" This central tendency of the mind is related to the categorization of the world and finding patterns that are contrasted with previous experiences or similar to them. Finally, in his last conclusion, Stern stresses that in this period, emotional and cognitive processes are hard to differentiate, and learning is both motivated by emotions and saturated with them. Therefore, in every emotional situation, perception and cognitions are intensively activated in both old and new ways. Sorting out these different and similar activations is a cognitive task based on affective experiences.

From the very beginning of his work, Stern stressed the role of carers, who regulate the inner states and arousals of an infant, starting from the regulation of the basic physiological activities [2]. Right after birth, parents are focused on the child, and from minute to minute try to regulate its emotions. Only after a few days are they able to predict the next 20 minutes of his/her reactions, and only after a few weeks is the rhythm of sleeping, being awake and feeding settled. This gives an infant an opportunity to function in general homeostasis, as the regulation of his/her physiological needs is inseparably related to such social behaviors as rocking, touching, stroking, talking, singing, making sounds, and eye contact. The emergence of the sense of self can be therefore seen mainly as a form

of learning, which is an innate activity of an infant. It is managed by both a motivational system and positive reinforcements.

Another process engaged in the emergence of the sense of self is so-called amodal perception, which means that infants are sensitive to a trans-modal transfer of information. Infants are able to recognize shape, intensity, and pattern of succession. The core experience of the breast comprises visual and tactile stimuli, similar to the sucking of the thumb or putting its fist into the mouth. According to Stern [2], at the preverbal level, the experience of creating a trans-modal connection is made when actual experiences are saturated with well-known, previous experiences. One can imagine that the experience of the breast's shape will be saturated with the previous experience of the mother's smell or the tone of her voice. The process of saturation follows the kinetic dynamics of the basic *vitality affects*, such as a sense of passing by, fading away, appearing, exploding, building up of sound (crescendo), fading out of sound, etc.⁴ These processes reflect the bodily functioning of an infant. Adults who interact with infants usually behave in exaggerated and stereotypical ways. Mimical gestures are slowed down, and repeated motives are just slightly modified to enable children to focus their attention and not become habituated to external stimuli. Within the vitality affects, activation and arousal are not experienced as feelings, but as dynamic shifts or changes in inner patterns. Vitality affects are separated from each other by changes (contours) of activation (arousal). Therefore, various modalities can correspond with each other, due to the similarity of aroused areas. In an infant's consciousness, different events will be connected when they evoke the same type of arousal (e.g. sucking of the breast, thumb, and fist). Experiences with similar contours of activation (arousal) are linked together and experienced as related (corresponding) to each other, creating a specific organization. Stern gives an example of a mother soothing her baby by repeating rhythmically "there, there, there", her intonation first going up and then down a word, every word accompanied by a gentle stroke of the infant's neck. The infant experiences just one affect: soothing – a vitally soothing mother, without differentiation between touch and sound. This illustrates the amodal experience of vitality affects, and the trans-modal linking of experiences. It means that when a mother soothes her baby using her touch and her voice, the infant does not differentiate between various sensory modalities, but identifies kinetic arousal and fading off of anxiety.

In order to clarify the process of consolidation of the sensorimotor schemas, Stern refers to the schema "thumb to mouth" studied by Samerhoff [2]. Initially, the baby moves its palm towards its mouth in a hardly coordinated, interrupted way. During the initial attempts, when the thumb approaches the mouth, the infant becomes aroused. The pattern remains incomplete (the thumb is not yet in the mouth) and the level of arousal grows. When the thumb finally gets into the mouth, the level of arousal declines as the pattern becomes completed and the baby is soothed by sucking. From that moment, a consolidated

⁴ A broader reference to vitality aspects in art and life is made by Stern in his last book *Forms of Vitality* [6].

schema begins to work. This schema is repeated until its functioning becomes smooth, which means that activation of the pattern is achieved via assimilation and accommodation of the sensorimotor schema. When the schema is ultimately formed, it goes on in an almost unnoticeable way.

In his later works, Stern (2004 - 2010) many times referred to a similar schema in the therapist–patient relationship when the process of searching for the right understanding, tuning in, disturbances, and ineffective attempts (here and now moments) evokes increasing arousal until the moment of attunement comes (the moment of meeting).

In this period of an infant's life, a number of sensorimotor schemas need to go through an adaptation process, engaging vitality affects associated with various parts of the body and arousals experienced in various situations. The subjective experience of formation and consolidation of the sensorimotor schemas is called by Stern the emergence of the self⁵. The sensorimotor schemas developed in this period of life create the first domain of the self, which Stern calls "the sense of influence". This domain is defined by the creation of specific organizations being at the center of creativity and learning. It remains active through the development of all the following domains of the self. The following senses of self are the results of this early organization process (Stern, 1985, p. 67-68).

The nuclear sense of self

The experience of interaction with another human being is one of the strongest life events. This experience is actualized mainly when the infant experiences the physical presence of the other person⁶. Descriptions of the interactions between children and their carers formed the basis of Stern's observations and scientific interests. One of the observed interactions was the game of "peek-a-boo", where the interaction with the carer generates a high level of arousal in the baby. During this game, tension is initially colored with anxiety, but finally it changes into joy and excitement. These feelings are evoked in the child cyclically, which would not be possible if a child at this age was alone. The cyclical character of the game and its intensity are the results of a co-creation that takes place in the relationship between an infant and its carer.

The arousal during the "peek-a-boo" game is one of the ways in which an infant may experience itself in interaction with others⁷. The course of action is similar in other activities

⁵ The emerging self is related to amodal perception, senso-motoric perception, physiognomic perception, and perception related to vitality affects [2].

⁶ Absent people may be experienced as potentially present or even concretely present, or as silent abstractions that are experienced only in an ethereal way. Daniel Stern begins a discussion with Mahler's theory, who presents an infant as initially fused with its carer. He states that a child interacts with other people since the very beginning of his/her life as a separate person.

⁷ Stern, by referring to other authors (i.a. Beebe, Tronic, Kroner), points to an interaction where smiles are exchanged, which, due to positive feedback, increase the expression of affect leading to a spiral of positive emotions.

regulating the feelings of bonding that are mentioned by Stern (1985), such as hugging, experiencing the other person's body through warmth, mutual eye gazing, holding someone, and being held. An infant could not experience these without the presence of another person. Stern has many times emphasized that "the experience of the other" constitutes the core of the sense of self. Later in life, this type of experience may be present even when the other person is fantasized and not necessarily actually present. He observes that even an imagined experience of hugging another person requires the presence of an imagined partner, just like a child can imagine hugging a pillow. Stern observes that the experience of being fed and the regulation of other somatic states is a transformation within an infant's self that requires the physical mediation of another person. In these cases, the chief experience of the child is the company of another person who regulates its somatic states.

Regulation of different states of an infant's self, from physiological to emotional ones, constitutes the key aspect of its formation. These transitions require three specific conditions: any changes in an infant's emotions belong to his/her self, even if they are stimulated by an interaction. Secondly, "the other" must be seen, heard, and felt when the child experiences a change within the self. Finally, the experience of the "nuclear self" and the "nuclear other" (repeated patterns, aspects of the other's self) remains intact when changes within the self take place. Stern posed the question of how these interactional processes in a more or less lasting way form the self of an infant. This key question could be also understood as a question about the genesis of the self's structure. On the basis of his research and observations, Stern responded that interactions between an infant and its carer that are repeated many times form a pattern that is formed in the memory of the child [3, 4].

The process of shaping the nuclear sense of self: the memory record of a repeated interaction

According to Stern, the process of shaping the nuclear sense of self can be traced back to a number of individual interactions between a carer and an infant that become specific interactive episodes recorded in the mind of an infant. As they are repeated, they create interactive memory traits that are later called generalized episodes of interaction [2, 3]. An episode of interaction can be understood as an internalized experience of an infant and an expectation of a certain type of interaction with another person. Another key fact is that these Representations of Interactions that have been Generalized (RIGs) have their mental representation and are therefore incorporated into the structure of the self. The making of this type of mental pattern is described by Stern with the example of a mother playing "peek-a-boo" with a baby. After the first experience of the game, a specific episode is recorded in the infant's memory. After the second instance of the game, another record is added and after the 12th game, there is a 12th memory record, each of these slightly different. On the basis of them, the baby forms a generalized episode of the "peek-a-boo" game (a "peek-a-boo" RIG). This generalized episode of interaction means that the child

knows the rules of the game, predicts its sequences, and moreover, links this game with certain emotional types of arousal. This example illustrates how the experience of being in a relationship with the regulating self of the other gradually forms mental representations of interactions that have been generalized (RIG). Episodes of interaction that are encoded in memory are activated when an attribute of a RIG is perceived, e.g. a mother's playful gesture. At that moment, an infant experiences a certain feeling that evokes in its mind a RIG (the whole scenario of the "peek-a-boo" game) that is attributed to this emotion. Attributes are therefore understood as specific indications activating a generalized episode of interaction. Whenever a RIG is activated, the former experience is wrapped up in a new quality and placed in the active memory. Each experience of an infant with the same person that regulates its self has a separate RIG. Activation of specific generalized episode of interaction influences individual regulative functions, such as biological, physiological and psychological ones. A subjective experience of being with the key regulating self of the other can be best described by the notion of an *evoked companion*. Whenever a generalized experience of interaction (RIG) with someone who has changed our experience of ourselves is activated, we get in touch with this "evoked companion", which changes our emotional state at the moment. If a child has had six similar episodes regulating the self regulating in interaction with another person, and these episodes are generalized and coded as RIG (RIG-6), and the child experiences a similar, yet not identical episode (*specific activity* 7), some attributes of this episode will act as a RIG 1-6 *retrieval clue*. RIG-6 is therefore a mental representation and not an activated memory trait. When a retrieval clue activates a RIG, it also activates memory in the form of the *evoked companion*. It is an experience of being with or being in the presence of the other, which regulates the child's self, that takes place out of consciousness. This "companion" is evoked not as a memory of a past event, but as an activated here-and-now pattern of internalized interactive events. This means that whenever an *evoked companion* is activated, the child may expect a specific type of emotional regulation. In some cases, bringing forth a memory is enough to regulate emotions, e.g. when the mother enters the room, or the uneasy child imagines that she enters the room (evoked companion), it will initiate the whole memorized RIG of a soothing interaction with the mother, who takes him/her in her arms and rocks him/her gently, thus regulating the child's emotions.

This conceptualization seems to be specifically useful in the explanation of clinical situations and normal life events, in which specific, generalized interactive patterns are activated as a reaction to specific retrieval clues. This model seems to give a notion about how in a relationship with a person different from the child's carer, and also in adult life with a therapist, certain generalized patterns of interaction can be activated. It is important to recognize when a certain aspect of the therapist's behavior may be treated as a retrieval clue and evoke certain emotions in the patient by activating an inner RIG.

An internalized, generalized pattern of interaction

The possibility of changing an internalized, generalized pattern of interaction is an important input into the psychotherapeutic process. The question is, to what extent can therapeutic relationships influence a patient's internalized patterns of interactions with others? Stern points out that each actual interactive episode (e.g. specific episode no. 7) activates a memory of a RIG shaped on the basis of previous similar events (RIG 1-6). The degree to which the specific event (7) is unique makes a change within RIG 1-6, turning it into RIG 1-7. RIG 7 will be therefore slightly changed when it is evoked by the next episode (8), and so on. In this way, RIGs are gradually updated by the succeeding events. The more experiences one has within a specific RIG, the lesser the influence of an individual event on the whole RIG. Stern's conclusion tells us that generalized, well-consolidated patterns of interactions require many structurally similar specific interactive events in order to be changed.

To enable a better understanding of generalized interaction patterns, Stern links the concepts of RIG, the other that regulates the self, and evoked companions to other concepts of the mother's working model in the theory of attachment, self-objects in the theory of self, the concept of fusion in Mahler's theory and early proto – internalizations from classical analytic theory. RIG is different from the working attachment models, as it does not only regulate the level of security in attachment relationships, but it refers to all the interactions that change the level of arousal, emotionality, competence, physiological states, curiosity, and consciousness [2, 3].

The concept of an *evoked companion* is used by Stern to describe a cumulated history of a specific type of interaction with the other. For an infant, it is the past that informs it about what is going on at the moment. When a mother is depressed and plays the "peek-a-boo" game, the infant tries to recognize whether this is still the type of game with the mother that he/she knows. If it is recognized, then the *evoked companion*, the prototype memory of numerous specific interactions with the mother, will have a stabilizing role. Evoked companions, activated by RIGs, are the basis of the infant's trust and its sense of security.

The infant's carer brings his/her history into every individual interactive episode as a result of his/her own subjective experiences. This dyadic system is of a symmetrical schema, yet it is not symmetrical in practice, because the mother brings a lot more of her own history into each meeting. She does not only have a working model of her baby but also a working model of her own mother, a working model of her husband (that the child may be constantly reminding her of) and many other working models that influence her interactions. In order to illustrate the mother's input into an interaction with her infant, Stern [2] quotes the example of Joel, whom he used to observe. Joel tried to draw his mother's attention but he was ignored. This specific interactive episode evoked memories both in the infant and in the mother. In the mother, it was the generalized pattern of interaction RIG (K) that was a working model of her mother as a mother. The RIG (K) consisted of

a specific representation of how her mother reacted when she was a child – and this was a reaction of disgust and aversion.

The *evoked companion* plays the chief role in choosing a specific RIG by the mother. She may have the following generalized model of interaction (RIG): Joel always has an unpleasant, useless, and unwelcome need for attention. Whenever a specific RIG is activated, it determines to a great degree the subjective experience of the mother, from whom Joel demands attention. Infants form their subjective experience, which is composed of the history of previous interactive episodes in a similar way. A concrete, observable interactive event – a specific interactive episode – works as a bridge between these two subjective worlds of a child and a mother. This specific conceptualization may be helpful in the understanding of why therapeutic interventions are effective in changing the nature and the way parents perceive their children. Stern [2] observed that when the nuclear sense of self is formed, the infant's experiences with the subjects that are personified by it have a self regulatory function⁸. At that time, mothers manipulate objects and make them “alive” by giving them sounds and rhythm. At this stage of development, the personification of objects has the function of a short-lived, self-regulating “person-object”. According to Stern, they differ from transitional objects, as the latter ones are developmentally more mature and require symbolization, whereas a person-object can be perceived as episodic memory. Daniel Stern has created a schema of the generalized pattern of interaction (RIG) which describes how the relationship with a carer is built through a number of specific episodes and forms the infant's sense of self. The sense of self is therefore relational in its nature, and its formation can be described by the processual creation of RIGs, i.e. multiple, predictable repetitions that are accompanied by the arousal and regulation of emotions. This idea has been further developed by Stern [3, 6] and the Boston Change Process Study Group in research on change in the therapeutic process, where mutual attunement, multiple repetitions, and mutual regulation of emotions form the basis of the therapeutic framework.

The subjective sense of self

Another important aspect of the child's development of self is the discovery of a separate mind – a subjective world which enables the child to recognize that others have separate minds too. Between the 7th and 9th months of life, children become aware that their subjective inner experience may be shared with another person. They learn that they can share intentions, actions, emotional states, and mutual paying attention to a toy, for example. For Stern [2], these interactions are another proof of the existence of the two separate minds that may meet in an act of sharing subjective experiences⁹. Prerequisites of this experience

⁸⁾ Analogy to Winnicott's transitional objects [9].

⁹⁾ Stern refers to the concept of intersubjectivity. At that time, the concept of intersubjectivity was a work-in-progress assumption, not the elaborate theory that it is today.

are a common area of meanings and a means of communication such as gestures, body language, and mimicry.

In this period of life, a new domain of self called *intersubjective relativity* develops. It is built on the basis of the abovementioned nuclear sense of self, which means that the states of the child's self and the other's self can be mutually regulated. Stern stresses that at this stage of development, these states can not only be regulated but also shared. In younger infants, only an empathetic mother's response is registered, and the process of attunement of the two separate minds is not yet reflected.

Stern argues that from this developmental moment, an infant gains the possibility to remain in psychic proximity, be sensitive, express its inner states, and become ready for the interpenetration of inner states with another person. The refusal to be psychologically recognized at this stage can have a profound impact on the child, as a deep need to be psychologically recognized is now awakened. At this stage, the infant learns to recognize which aspects of its private world can be shared, and which cannot be shared and mutually recognized. Children enter a world where they can experience psychological dependence and/or isolation.

Stern names three types of affective states that play a crucial role in the development of the interpersonal world of an infant prior to language development. The first one is the sharing of attention by pointing to something or following one's gaze, as the first acts of sharing. Both mother and the baby point to objects. When the mother points to some object, the baby must focus not on the hand, but on the object it points to. Stern stresses that a nine-month-old baby can not only gaze in the direction pointed to by the mother, but when they see the object, they look back at her, as if they need to have confirmation (feedback) that they have looked the right way. Although the child does not do it consciously, it is a purposeful attempt to check whether the moment of attention sharing has been achieved. Stern's [2] observations of attention sharing in infants enabled him to form the conclusion that nine-month-old babies gain the ability to focus their attention, which is also observed by their mothers. These two mental states can be similar or different. If they are different, they can be negotiated and shared. This process is called *interattentionality*.

The next developmental phenomenon observed by Stern [2] is the sharing of intentions. In the ninth month of life, the intention to communicate develops. It is preceded by such protolinguistic forms of communication as gestures, body positions, behaviors, and non-verbal vocalizations. The most direct forms of protolinguistic communication are various forms of demanding. Stern gives an example of a mother-child interaction when the mother holds in her hand an object desired by the child, e.g. a cookie. The child reaches with an open palm towards the mother and in the meantime looks alternatively at its hand and the mother's face, intoning "Eh! Eh!" with ascending prosody. These types of events are clearly directed at a specific person and are related to the infant's ability to understand the intentions of the other person and to react to them. These intentions become experiences that are shared in the process of *inter-intentionality*. Shortly after babies become nine months old, they can tease and make jokes, which is possible only if the baby recognizes

that others have their mental states that can be shared, such as intentions and expectations. The final developmental achievement of this period, according to Stern [2], is the sharing of affective states (*interactivity*). Stern refers to the phenomenon of social reference. This is observed when children around their first year of life are left in a situation of social uncertainty or ambivalence between coming closer and running away. During the experiment, an attractive toy was presented to a child, but it produced loud and strange sounds. In such situations, the child tends to check his mother's mimicry for orientation and the emotional assessment of the toy. When the mother smiles, the baby usually smiles too and is not afraid to approach the toy. From his observations, Stern drew the conclusion that children make a connection between their own emotional state and the emotional state perceived on the face of the other. He called this process *interactivity*. Stern stressed many times that most protolinguistic exchanges related to intentions and objects are at the same time emotional exchanges. The abovementioned developmental events allowed Stern [2] to introduce the notion of *intersubjective relatedness*. Stern observed that intersubjective successes enhance the sense of security, whereas intersubjective disturbances may be experienced and interpreted as total disruptions of relatedness. He understood various psychotic states as opposed to intersubjective attunement in relation to others. The psychotic experience expands between two extremes, from the experience of cosmic psychological isolation and loneliness to the experience of total psychological transparency.

The subjective sense of self: emotional attunement

Interactivity, or the sharing of emotions, is linked by Stern (1985) to parental mirroring and the readiness to empathetic response. These phenomena are broadly recognized to have high clinical value, although the process of their actualization is not yet described in detail. Intersubjective exchange requires the parallel engagement of a few skills. The first of them is the parent's ability to read the infant's emotional states. The second prerequisite is that the parent plays out this behavior not in a simple, imitative way, but in a way that corresponds with the infant's behavior. Finally, the third prerequisite is that the infant can read the parent's response as related to its initial, emotional experience. The presence of these three processes guarantees that emotions experienced by one person will be recognized by the other and experienced by two people without the use of language.

Referring to several infant observations, Stern [2] indicates that mothers usually act within the same sensual modality as their babies. In leading, following and emphasizing, they operate in the proximity of what the child presents. When a child vocalizes, the mother vocalizes; when a child makes a facial gesture, the mother makes a facial gesture too. It is important, however, that she makes some modifications and presents the child with some slight modifications that are her input into each turn of the dialogue [1, 2].

Around the 9th month of an infant's life, the mother begins to treat it as an intersubjective partner. In Stern's opinion, this is the result of her intuition. A new dimension of the

relationship emerges, called *affective attunement*. It begins to play its role in interactions between a child and a mother. In his works, Stern [1, 2, 6] describes numerous observed examples of emotional attunement. A ten-month-old girl was very excited because of a toy. She began to reach for it, producing frolic sounds “Aaaah!”, at the same time she looked towards her mother. The mother looked at her daughter and moved her arms energetically, first folding them and then thrusting them forward as if in a shimmy or go-go dance. Mother’s shimmy lasted just as long as the daughter’s “Aaaah!”; it was as excited, full of joy and emotion. According to Stern [2], it was based on three interrelated dimensions of interaction. The first is a kind of imitation, as the mother was not mimicking the same action, and yet was somehow participating in her daughter’s activity. Secondly, this participation is in most cases intermodal, which means that carers do not necessarily use the same channel of communication. Thirdly, what the carer joins is not the child’s behavior itself, but one of its aspects that expresses an emotional state. After all, this relation is made via an emotional state – linking between the external expressions of the inner states. These expressions may differ in form or intensity as they express inner states, but to some degree they remain unchanging.

These moments of emotional attunement are so important because pure imitations or repetitions¹⁰ would not allow the partners of interaction to refer to their inner states. They refer to something that is beyond observable behavior – the quality of emotions that are shared. Imitation refers to the form, and attunement refers to feelings, although both are shaping the activity. In this way, Stern tried to describe emotional attunement that goes beyond imitation. Emotional attunement is achieved via aspects of interaction such as intensity of arousal, contour of intensity, pace, rhythm, duration and shape.

Experiments conducted by Stern showed how children reacted to inadequate attunement when mothers changed their pace, slowed down their movements or speeded them up or changed the direction of the interaction. In each of these experimental situations, children stopped their typical way of playing and looked in a meaningful or anxious way at their mothers. Based on these observations, Stern isolated the following attunement characteristics: intensity, time and shape. These criteria were recognized as the best ones to define the quality of attunement, as they can be observed in different sensory modalities.

The mother’s attunement to the child is related to both types of affects: categorial affects (joy, sadness) which express subjective internal states, and vital affects (intensity, outbursts, extinguishing) which moderate attunement. The vital affects are amodal and can be expressed in almost any behavior. The following and attunement moderated by the vital affects make being with the other possible in an almost continuous way through the sharing of inner states. Stern [2] described attunement in a way analogous to art, where the

¹⁰⁾ It needs to be stressed that Stern [2] not only observed interactions between mothers and infants, but he also asked them for reasons of the emotional attunement. He often received the following answers: “to be with”, “to join”, “to share” and “to participate”, which show that they consciously experienced their behaviors as linked with emotional relating.

form of expression is translated by the observer into emotions. In attunement, perception of the other's behavior is translated into emotions.

The verbal sense of self

During the second year of life, the child acquires language, which makes the sharing of meanings possible. Yet this is a double-edged sword. It makes a significant difference between the two parallel forms of the interpersonal experience: the emotional experience and its verbal representation [2 p. 162]. All the abovementioned processes within the emerging, nuclear and intersubjective senses of self take place independently from language and can be verbalized only to a certain degree. However, if these experiences remain within these domains and are not represented in the domain of verbal relatedness, they will become alienated. Language may then become a tool that divides the sense of oneself. It moves the relational experience to the impersonal, abstract level, far from the personal and directive relational level of experience.

Based on the achievements of developmental psychology, Stern [2] argues that in the language acquisition phase, children are able to coordinate the schemas present in their minds, with both external reality events and those referred to in language. Thanks to language, children can discover that their personal knowledge is a part of a broader one and their cultural meanings are shared with others. He was close to John Dore's concept [7, 8] that in its beginnings, language is a specific Winnicott [9] transitional object for the baby. Words are discovered and created by children as thoughts or knowledge are awaiting in the child's mind ready to find a word that will express it. A word comes from outside, from the other/mother, but there exists a thought in the child that can be linked with the word. In this sense, words as transitional phenomena do not really belong to the self or to the other. They occupy a central position between the child's subjectivity and the mother's objectivity. According to Stern [2], language becomes a new way of referring to others (both, present and absent ones) by sharing personal knowledge of the world with them. He called this phenomenon a meeting in the verbal relating domain.

Stern [2] often stressed that this new level of verbal relating does not reduce the experience of the self on the levels of nuclear and intersubjective relating, as they function on two levels: verbalized and non-verbalized. To illustrate this phenomenon, he gives the example of how a child perceives a ray of sunlight on the wall. The child feels its intensity, warmth, shape, brightness, pleasure, and other amodal aspects of the patch of light. The fact that the light is yellow is not a *primaeval* or the most important experience. Looking at the ray of sunshine, the child is engaged in a global experience, one that resonates with a mixture of amodal characteristics, such as intensity or warmth. To be open to them, the child remains outside of the visual specification of this experience. If somebody enters the room and says, "Look at this yellow light!", these words will separate and define the quality of this experience in one perceptual modality. By linking them to a certain word,

they isolate this experience from a stream of amodal, primary experiences. Therefore, language separates the amodal, global experience and introduces discontinuity to it. In the child's further development, the verbal version of the 'yellow light' becomes the official one, yet it does contain its amodal version, which may, in some circumstances, dominate over the linguistic one.

Some experiences of one's self, such as the sense of continuity, coherence, physical integration, the beating of the heart or regular breathing are rarely decoded verbally. Many other experiences of being with the other take place in this non-verbalized category, e.g. looking in the eyes. These types of experiences may be however verbalized in some circumstances. Reading Stern's papers, one may conclude that in the process of language development, children can both transgress and distort the reality of their life.

The abovementioned basic domains of the development of the self in the relation to others constitute a basic matrix for understanding other interpersonal relationships. In a therapeutic relationship, these processes may not only be directly observed, but in some cases also initiated. Thanks to this knowledge, we can analyze the rudimentary aspects of the development of the self and understand possible distortions of this process and its clinical consequences.

Summary

The central aspect in the development of the child's sense of self according to Daniel Stern is probably his description of the nonverbal aspects of the intersubjective exchange with the carer. It allows us to understand better how certain aspects of the sense of self that developed in the nonverbal phase can be activated throughout one's whole adult life.

Another key aspect of Stern's theory is the description of how relational experiences of the child are built into the basic aspects of our sense of self and become activated in other interactions. By studying a dyadic relation, Stern stresses the importance of its so-called "local" interactional context, consisting of actual verbal utterances (phrases, changes of topic) and nonverbal ones (silence between words, gestures, changes of the body's position). Each change is perceived as something that introduces a micro change in the relationship (also a therapeutic one), which is called by Stern a *relational shift* [3]. A change, which is the core element of the therapeutic process, is achieved via these relational shifts. The second part of the paper will present Daniel Stern's and the Boston Group's input into the understanding of the nature of change in the psychotherapeutic process.

Literature

1. Stern DN. The first relationship: infant and mother. London: Fontana Open Books, 1979.
2. Stern DN. The interpersonal word of the infant. Basic Books, Inc., Publishers/New York, 1985

-
3. Stern D N. *The present moment in psychotherapy and everyday life*. W.W. Norton & Company, 2004.
 4. Lichtenberg JD. *A developmentalist's approach to research, theory, and therapy: the selected works of Joseph D. Lichtenberg*. London: Routledge, Taylor & Francis Group, 2016.
 5. Michels R. Stern on "self". *Psychoanalytic Inquiry*, 2017, 37(4): 265–269. DOI: 10.1080/07351690.2017.1299502
 6. Stern DN. *Forms of Vitality*. Oxford University Press, 2010.
 7. Dore J. Holophrases, speech acts and language universals. *J. Child Lang.* 1975, (2): 20–40.
 8. Dore J. *Conversational acts and the acquisition of language*. W: Ochs E, Schieffelin B, red. *Children single word speech*. London: Willey, 1979.
 9. Winnicot DW. *Zabawa i rzeczywistość*. Gdańsk: Imago, 2011.

Email address: bernadetta.janusz@uj.edu.pl