

**DIALOGICAL CHANGE PROCESSES, EMOTIONS,
AND THE EARLY EMERGENCE OF SELF**

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ABSTRACT. The present paper is grounded on the premise that emotions are an essential component of self development as they simultaneously foster a sense of connection with and differentiation from others. Emotions are viewed as holistic as they dynamically involve the whole body and emerge in dialogical contexts. Emotions involve feelings of being alive (or not) in relationships, experiences that are dynamically lived and developed over time through co-regulated dialogues with others. We contend that the study of early emotions in dialogical contexts constitutes a viable avenue to study how young infants develop their sense of self. A case study of a mother-infant dyad's co-regulated experiences is presented with the goal of illustrating the theoretical and methodological contributions of examining self and emotions as dialogically and dynamically evolving over time.

This paper examines emotions as a crucial and integral component of self development. We argue that emotions are dialogical experiences lived in bodies – bodies that co-exist in relation to other bodies, bodies that engage in alive communication with others, bodies that co-regulate their movements with the movements of others. It follows then that a productive strategy to study how infants develop their sense of self is through the examination of early emotions in the dialogical contexts infants co-created with their mothers. The theoretical underpinnings of the work presented are influenced by dynamic systems theory and the works of Henri Wallon, Mikhail Bakhtin, and David Bohm.

We start by presenting Wallon's efforts to integrate emotions and self development, followed by a short discussion of Bakhtin's contributions to conceptualizing selfhood as dialogical and Bohm's view on dialogue, self and emotions.

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We then discuss dynamic systems principles relevant to our understanding of emotions as developing dynamically over time in dialogical contexts. Lastly, we present a case study of dialogical exchanges between a mother and her infant in the first months of life to demonstrate how a microgenetic analysis of emotions can add to our understanding of self development in infancy.

Henri Wallon: Self, Emotions and Relationships

French psychologist Henri Wallon (a contemporary of Jean Piaget) has long offered a perspective in which self and emotions are viewed as emerging in the context of the dialectical interchanges between the child and his/her social surroundings (Birns, 1984; Wallon, 1951). At a time when dualistic views of self-other dominated psychological discourse (that is, social others were either neglected for the sake of studying the “inner” self or were conceived of as external forces imposed upon the self), Wallon (1954) wrote about the child’s bodily, emotional and dialogical vicissitudes as being central in the development of self; also known as the “body-psycho-social” model. In Wallon’s own words:

For the first individual self awareness emerges from passionate involvements where each person distinguishes himself with difficulty from others and from the total scene in which his appetites, desires, and fears are bound up. [...] The *socius*, or *other*, is the ego’s constant partner in mental life. [...] All deliberation and indecision is a dialogue—sometimes a rather explicit one—between the ego and an objector (Wallon, 1946, p. 96 & 100, emphasis in original).

According to Wallon (1954, 1984), it is through emotionally charged exchanges with others that children simultaneously experience a sense of connection with and separation from others, thereby contributing to their self development. Children’s emotions are not just adaptive reactions to situations; instead, the foremost function of emotions is that of communication between self and others, including others in the family, the school system, among peers, and so on.

When Wallon (1956) describes five stages of self development, he consistently incorporates the child’s emotional and social experiences as an integral part of this developmental process. During the first stage of self development, the *Impulsive Stage*, Wallon contends that an infant’s sense of selfhood in the first months of life is primarily free-flowing and governed by its emotional and physiological needs that are lived and fulfilled through others. During this stage, an infant’s self is predominantly fused with others. The second stage of self development emerges by the third month of life, the *Conditioned Associations Stage*. Infants begin to recognize recurrent relationship patterns associated with their experiences of satisfaction and frustration. As these

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patterns of satisfaction/frustration emerge, infants start to associate certain bodily experiences of pleasure or displeasure with specific routines lived with others.

By six months of age, the third stage of self development takes shape, the *Emotional Stage*. Infants now experience and express a wide range of emotions through their affective relationships with others. This broadening in infants' emotional repertoire is pivotal in facilitating an infant's insight into his self contributions to these affective experiences. For instance, when playing with and smiling at their mothers, infants do not merely respond to their mothers; instead infants actively contribute to the feelings of joy as they participate in an episode of positive emotional communication with their mothers. Likewise, as infants become overwhelmed with their mothers' intensely charged efforts to play with them, infants may attempt to disengage from their mothers by looking away from them, stretching their bodies, while maintaining a somewhat neutral facial configuration. As infants widen their repertoire of emotions through affective experiences with their primary caregivers, they also begin to develop and experience a sense that engaging (or disengaging) in communication with others may escalate (or de-escalate) the flow of that communication. Through these lived experiences, infants embark on a gradual process of differentiation from others, or what we like to refer to as a process of distinguishing their self positioning from that of others.

He [infant] begins to recognize the indications of probable success, soon located in the person of the provider. In this way, his gestures, postures, countenance, and voice enter the expressive realm, which thus has a double action: an efferent action that translates the child's desires and an afferent one for affecting the disposition which these desires encounter or elicit in the other person (Wallon, 1946, p. 95).

The *Sensorimotor/Exploratory Stage* follows the stage just described. The fourth stage of self development occurs between the ages of 8 and 10 months as infants begin to more consistently explore their physical environment by manipulating various shapes and structures. While these exploratory manipulations are relatively more independent due to the infant's newly acquired motor and postural skills (such as sitting upright and holding two objects at the same time), an infant's experiences with others continue to be permeated by "affective contagion and confusion" (Wallon, 1956, p. 28). In other words, the power of emotions to foster a sense of connection with others continues to overshadow the power of emotions to highlight an infant's unique contribution to the flow of these affective experiences. To put it simply, an infant's sense of self has not been fully differentiated from that of their relationship partners (or what Wallon referred to as a child's essential strangers).

Around the third year of life, as the *Personalist Stage* begins, the child now has experimented with various self-positions in playful contexts with a variety of social others. These experiences, referred to as *games of alternation* by Wallon, allow the child to finalize his differentiation process from his relationship partners. An important paradox is highlighted by Wallon: by becoming more fully aware of his separateness from others, the child is also reminded of the dialectical necessity (or what we refer to as dialogical necessity) of others as his position in these “games of alternation” can only be lived in the presence (physical or imaginary) of others.

In sum, Wallon (1946; 1956) suggests that emotions lived in relational contexts involving self and others create opportunities for children to not only connect with others but also to differentiate themselves from others. This is because emotions are powerfully felt experiences that orient the child toward and away from others, they enhance a child’s awareness of his unique self position in relation to others while also facilitating a sense of connection with (or disconnection from) others. It is important to highlight that the child’s sense of separateness is not to be confused with a dualist view of self and others in which the self is conceptualized as a self-contained entity. For Wallon, distinction from others is only accomplished dialectically in the midst of a child’s emotional experiences of relating with others. A classic illustration of this simultaneous experience of relating to and separating from others in the process of self development is a child’s imitation of a model, typically observed during the *Personalist Stage*. When imitating, a child is very selective, often choosing models to which the child feels emotionally close. In mimicking his models, the child temporarily “borrows or becomes these persons” (Wallon, 1965, p. 136), while also slightly modifying the imitated act, endowing it with emotions and making it his own.

Before proceeding to our brief discussions of Bakhtin’s view on dialogical self and Bohm’s view on dialogue, we would like to emphasize that recent research (e.g., Fogel, 2005; Rochat, 2003) on infants’ self experiences has consistently demonstrated that infants as young as 2 months of age are able to integrate sensory information from their eyes or ears, for example, with the coordinated sensations of their bodies. These cross-modal experiences are crucial in the early development of an infants’ sense of self; this sense of self rooted in an infant’s cross-modal, bodily experiences is known by infancy researchers as *ecological* or *situated self*. For instance, as infants observe their hands moving in front of them while also feeling the movements of their hands, infants also experience their bodies as situated in a unique location – a location that is different from the location occupied by others. Similarly, hearing infants recognize their own emotional vocalizations (content or distress) as their sound production is cross-modally associated with different experiences of their throat and mouth as well as the social situations in which these experiences emerge. Therefore, infancy research indicates that an infant’s cross-modal experiences contribute to the early experiences of feeling positioned in a unique location in relation to others.

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When infants experience their own crying, their own touch, or experience the perfect contingency between seen and felt bodily movements (e.g., the arm crossing the field of view), they perceive something that no one but themselves can perceive. The transport of their own hand to the face, very frequent at birth and even during the last trimester of pregnancy, is a unique tactile experience, unlike any other tactile experience as it entails a “double touch”: the hand touching the face and simultaneously the face touching the hand. (Rochat, 2003, p. 723).

While we embrace Wallon’s contributions to our studies of emotions and self development, especially his consistent efforts to integrate children’s emotions and their social experiences as part of the study of self development, we argue that an infant’s bodily experiences of differentiation from and through others can be found in earlier dialogical exchanges between mothers and her infants during the first months of life (a topic we will cover later in this paper). We now turn our attention to Bakhtin’s and Bohm’s contributions on our view of dialogue, self and emotions.

Mikhail Bakhtin and David Bohm: Self in Dialogue

Another important theoretical influence to the work presented in this paper is Mikhail Bakhtin’s view of dialogical self and David Bohm’s philosophy of *dialogue*. Similar to Wallon, Bakhtin offers a perspective of selfhood that is contrasted with the predominant dualistic view of self-other of the early 20th century – a revolutionary view at the time and, to a certain extent, still today (e.g., Holquist, 1994). Bakhtin emphasized that individuals situate (position) and feel themselves in relation to others in the very act of communicating with others. It is important to note that Bakhtin’s philosophy of dialogue is not to be simplified to analyses of interpersonal discourse. Dialogue represents a worldview in which one’s existence, one’s sense of selfhood, is not divorced from the experiences of being with others. It is our contention then that every self experience is a dialogical and emotional experience, whether the dialogue occurs in the context of an interpersonal or intrapersonal communication. As Michael Holquist (1994) put:

In dialogism, the very capacity to have consciousness is based on *otherness*. [...] More accurately, it is the differential relation between a center and all that is not that center. [...] It cannot be stressed enough that for him ‘self’ is dialogic, a *relation* (pp. 18-19, emphasis in original)

This view of selfhood lived as situated in dialogue does not negate self as distinct from others (Hermans, 1996, 1997). Bakhtin often wrote about the lively experiences of selfhood as a “unique and unified event of being,” a being whose unique body, whose unique existence is lived dialogically through mutual movements of

communication with others. But how does this unique self position emerge through dialogue? Part of the answer is Bakhtin's notion of simultaneity in space and time. When engaged in communicative encounters with one another, self and other simultaneously occupy different bodies located in different spaces, thereby circumscribing each individual's position in relation to one another. To better illustrate this notion of simultaneity let us consider a hypothetical occurrence commonly observed in the lives of many young infants. As an infant moves his arm toward an object that is out of his reach, the completion (or not) of that movement will depend on whether or not that object is placed within his reach by another person (say, his mother). In this case, the infant's blissful bodily experiences of successfully reaching the object depends on the motor support provided by his mother as she places the object closer to her infant's reach. If the mother, however, does not place the object closer to her infant's reach as he moves his arm toward it and continues to look at him instead, different self positions are occupied by both mother and infant, influencing the unsuccessful reaching of the object. In these examples one can witness the dynamics of two feeling bodies, simultaneously positioned in two different spatial locations, co-participating in the emotional experiences of successfully or unsuccessfully reaching an object. Therefore, by simultaneously occupying different bodies that are feeling different sensations in relation to one another, mother and infant are dialogically circumscribing each other's self position and, in a way, each other's emotions. What follows then is that from very early on, without the other, there would be no self and emotions; and likewise, without the self, there would be no other and emotions.

David Bohm, a theoretical physicist of our times, further contributes to our view of dialogue as mutually co-regulated movements that emerge when two (or more) bodies encounter one another. According to Bohm, dialogue emerges as individuals engage in emotional communication with one another; or what we called elsewhere *alive communication* (Fogel & Garvey, 2006). Of particular note is Bohm's emphasis on the emotional aspects of being in dialogue with others; emotions are conceived of as a crucial component in the evolution of relationships and one's sense of selfhood. As Nichol (1996) highlights in the Foreword of Bohm's book *On Dialogue*:

As conceived by Bohm, dialogue is a multi-faceted process, looking well beyond typical notions of conversation parlance and exchange. It is a process which explores an unusually wide range of human experience: our closely-held values; *the nature and intensity of emotions*; the patterns of our thought processes; the function of memory; the import of inherited cultural myths; and *the manner in which our neurophysiology structures moment-to-moment experiences* (p. vii, emphasis added).

Emotions are thus a unique phenomenon to be closely examined because emotions inform individuals about their self positions in relation to others as well as the

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significance of their relationships with others. When discussing an individual's experience of selfhood, Bohm (1996) describes the emotions lived in communicative contexts. For instance, when experiencing a moment of anger in relation to another person, an individual might experience changes in his bodily sensations and in his thoughts, while the other might be simultaneously changing his body and his thoughts. "[...] the heartbeat, the blood pressure, the way you breathe, the way your body feels tense; and also the kinds of thoughts that go along with these feelings" (Bohm, 1996, p. 74). Over time, the recurrence of such experiences of anger in relation to that other person will contribute to one's sense of self as an angry and resentful individual and the emotional aliveness of the relationship. Therefore, these bodily changes are essential to one's emotional experiences of selfhood over time.

When considering Bakhtin's and Bohm's contributions, self development is conceived of as an active and continuous process of co-being: whether it is co-being in linguistically-dominated dialogues, in kinesthetically-dominated dialogues, or both. Selfhood thus involves at least three parameters that liaise continuously and actively with one another: self, other, and the relationships between self and other. We now turn our attention to dynamic system's contributions to our view of emotions.

Dynamic Systems Theory: Emotions as Self-Organizing Processes

The linguistic connotation of the term "emotion" is rooted, in part, in the history of emotion theories which have focused on emotions as internal, discrete states to be expressed outwardly through distinct facial patterns (e.g., Ekman & Friesen, 1975, 1978; Izard, 1997). This tradition has led to incredibly detailed analyses of the face, focusing on the different facial muscles in the composition of patterned facial expressions (Demos, 1988).

While detailed analyses of the face have advanced our understanding of the complexity involved in studying emotions; in everyday life, emotional experiences are holistic as they dynamically involve the face and the body and develop over time within dialogical contexts. As we recently discussed elsewhere (Fogel & Garvey, 2006), emotions are alive experiences dynamically lived and developed over time through co-regulated dialogues with others. Influenced by dynamic systems theory and the works of Bakhtin, Bohm and Wallon, we view emotions as dynamic dialogical flows of experience that open (or close) opportunities for each person's experience of co-being (Fogel, 2005, Pantoja, 2001; Pantoja, Nelson-Goens, Fogel, 2001). It is our contention that these dialogical experiences embody dynamic co-changes in heart rate, blood flow, hormones, brain chemistry, bodily movements, thought processes, and so on; and together, these experiences coalesce into dynamically stable patterns we call emotions.

Viewing emotions as dynamic processes emerging in dialogue (whether interpersonal or intrapersonal dialogue) is a fruitful approach to circumvent the

inclination toward fragmenting emotions into discrete units contained by the body, especially the face (e.g., Camras, 1991; Fogel, Nwokah, Dedo, Messinger, Dickson, Matusov, & Holt, 1992; Fogel, Dickson, Hsu, Messinger, Nelson-Goens, & Nwokah, 1997; Lewis, 1995; Lewis & Todd, 2005; Messinger, Fogel, & Dickson, 1997, 1999; Weinberg & Tronick, 1994; Wolff, 1987). Dynamic systems theory is thus conceptually relevant in that it provides heuristic tools to examine the dialogical change processes implicated in the dynamic unfolding of self and emotions over time.

Dynamic systems theory strongly relies on the principle of self-organization (Fogel et al., 1992; Granic, 2000; Lewis, 1995; Lewis & Todd, 2005; Liable & Thompson, 2000; Messinger, Dickson, & Fogel, 1997, 1999; Pantoja, Nelson-Goens, & Fogel, 2001, van Geert, 2003). Self-organization refers to the continuous process of interaction among the system's constituents that cooperatively and spontaneously gives form to dynamically stable patterns of co-activity. In other words, self-organization is a spontaneous process of mutual influence among the system's components through which order emerges. To self-organize is "to form intricate patterns from interactions among simpler parts, without prespecified blueprints" (Liable & Thompson, 2000, p. 299). For instance, the various muscles of the face carefully examined by differential emotions theorists are conceptualized as constituents of the system that self-organize into various emotion patterns, thereby allowing for the observable distinction between facial expressions of sadness and joy. As stated by Lewis and Todd (2005) in a recent discussion of emotions and cognition:

Emotion theorists who have taken a dynamic systems approach (Fogel, 1993; Lewis, 1995, 1996; Scherer, 2000) view emotions as evolving wholes, rather than end-points in a cognitive computation or starting points in the production of a cognitive bias. Emotional wholes are seen as cohering in real time through the interaction of many constituent processes, and it is the synchronization of these processes, as well as the properties of the whole, that becomes the focus of investigation (p. 215).

Therefore, based on the principle of self-organization, descriptions of the microgenetic details of humans' *day-to-day experiences* and *over time* are at the core of an analysis of emotions and self development. The face is thus considered herein one among many constituents of emotions. Other constituents include body postures and positions, gestures, vocalizations, activities of the brain, and the dialogical contexts in which human beings are engaged (Fogel, 1993). In other words, emotions are lived dynamically vis-à-vis the actions, postures, gestures, vocalizations, movements and biological flows within the body which emerge through dialogue with others or the self. In a way, emotions integrate the three parameters of a dialogical view of selfhood mentioned previously: self, other and the relationship.

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But how do emotions integrate these three parameters? Let us consider the following hypothetical situation. During a pleasant conversation at a coffee shop, two adults may gradually lean toward each other, relaxing their bodies, slightly tilting their heads, turning their eyes to one another, producing a smile on their faces, and gently raising the intonation of their voices while talking to one another. In doing so, one of the individuals (or both) may wonder or simply feel: “*Does he feel as close to me as I feel to him?*” or “*Is he as connected to me as I am to him?*” Over time, if these dialogical encounters are mutually amplified, both individuals may not only continue to co-create a pleasant inclination toward one another but they also continue to co-create additional opportunities to introduce their unique contributions as separate selves to the flow of their relationship. Therefore, through these emotional fields of dialogical co-activity, dynamic opportunities emerge over time for individuals (including infants) to further contribute to the evolution (or deterioration) of their relationship while experiencing their self positions as moving, feeling and occupying an unique space with respect to one another.

By now, it is rather apparent that our view of emotions as dynamically self-organizing patterns that emerge through dialogue does not deny that individuals experience emotions as their own. Quite the contrary, within this framework, emotions are uniquely experienced by each individual whose body is situated in different locations in relation to others. As stated previously, emotions are lived in bodies, bodies that co-exist in relation to other bodies, but they are not “contained” by the body. As an individual’s body reaches out, leans into, and connects to another body, she may experience openness and relatedness with the other as long as the other is also open to connect and relate to her. Through dialogue, the body will tune into various emotional experiences such as openness or closeness toward others, connection or disconnection from others, and so on, a process called affective resonance (Schoore, 2001).

In sum, this paper is based on the idea that emotions can be thought of as self-organizing patterns that emerge through dialogue with others, contributing to the development of self and the meaningful relationships that compose an individual’s life. We refer to these dialogical patterns of emotion communication *frames*. In interpersonal contexts, frames are segments of co-action that have a coherent theme, that take place in a specific location, and that involve particular forms of mutual co-orientation between participants (for a more detailed discussion on frames, see Fogel, 1993; Pantoja, 2001).

In the case of infants, dialogical experiences with their mothers are particularly relevant because it is with those significant others infants spend a great deal of their waking time developing primary relationships. We now turn our attention to the microgenetic analysis of an infant’s self experiences in dialogical contexts co-created with his mother during the first months of his life as a means to illustrate how self and emotions are developmentally related.

Case Study of Emotions and Self in Dialogical Contexts called Frames

The infant is referred to as Nathan and the mother is referred to as Patricia. Nathan was the youngest child of three of a middle-class Anglo-Saxon family residing in the western mountain region of the United States. Nathan and Patricia visited the laboratory playroom three times a week for a period of four months, starting when Nathan was 10 weeks old and ending when he was 26 weeks old for a total of 48 visits. At their first visit to the laboratory, Patricia was asked to “do what you would normally do at home”. No other instructions were provided. Patricia was allowed to play with Nathan in the sofa and on the floor, to freely talk to Nathan, to change Nathan’s diapers, or to feed him, thereby allowing the information-richness of the dyad’s everyday life be part of the videotaped sessions.

After systematically watching the 48 visits of free-flowing emotion communication between Nathan and Patricia, multiple patterns of emotion communication were identified in the ways Nathan and Patricia engaged in dialogical exchanges with one another. These patterns were reflected in the recurrence of various frames and emergence of new frames (Pantoja, 2000). For the purpose of illustrating the contributions of examining self and emotions as dialogically and dynamically evolving over time through frames, we will focus our analyses on a few frames observed from visit 1 through 20.

Across the first 20 visits analyzed, Nathan and Patricia gradually modified and reinstated their self positions in their relationship through frames. In the first five visits, frames involving the direct connection between Nathan and Patricia without the consistent use of objects were observed: these frames ranged from playful moments involving smiles, vocalizations, and tactile games to more mellow moments between Nathan and Patricia involving mutual gazing and soft touches. In these frames, both Nathan and Patricia were predominantly co-oriented to one another, continually co-regulating their movements with respect to one another. Between sessions 5 and 9, Nathan and Patricia began to more consistently introduce novel activities to their existing frames, including the use of objects. As novelty was introduced, familiar dialogical routines (as reflected in previously observed frames) were also reinstated in their flow of communication and moments of emotional divergence between Nathan and Patricia increased. Lastly, between visits 10 and 20, a phase shift in the dyad’s playful routines was observed: Nathan began to consistently engage in persistent exploration of his hands and/or toys through mouthing, while Patricia quietly observed her infant, often times providing postural support to his explorations.

But how do these dialogical changes in frames and emotions contribute to Nathan’s sense of self? With the goal of addressing this question, we will focus our microgenetic analysis on three frames co-created by Nathan and Patricia over the course of the first 20 visits: social playful frames, emotional asymmetry frames, and interest in

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toy frames (defined below and highlighted in **bold**). These frames are highlighted herein as they represent the predominant patterns of emotion communication between Nathan and Patricia across the 20 visits analyzed.

Tuesday, June 9, 1998

This is Nathan and Patricia's first visit. Nathan is 10 weeks old. Patricia places him on the floor in a supine position while he is crying loudly. His arms and legs are stiff, his mouth open and downward, his gaze directed to the ceiling as Patricia changes Nathan's diapers, talking with a neutral tone of voice, looking at him. As Nathan calms down, moments of positive playful connection between Nathan and Patricia emerge, referred here as to **social playful frames** due to the absence of toys. In these social playful frames, Nathan and Patricia appear to immensely enjoy one another as Patricia plays with Nathan's body, talking with a melodic tone of voice, smiling and brightening her face. Nathan also smiles, looking at Patricia, protruding his lips and vocalizing. These sequences of co-actions that constitute the dyad's playful connection are illustrated in the following segment. Nathan's bodily changes are underlined and *italicized*. Note how Nathan participates in the amplification of the social playful frame by maintaining his gaze toward Patricia, vocalizing, smiling, moving his head up and down, and opening up his body to this flow of positive emotion communication with his mother.

Visit 1, Segment 1. 04:52 Patricia looks at Nathan's eyes, raising her eyebrows, softly talking to him and rubbing her right hand on Nathan's stomach. 04:56 As Patricia continues rubbing her right hand on Nathan's stomach, Nathan jerks his body, abruptly moving his left arm and relaxing his eyebrows. At this point, Patricia makes a mock surprise face saying: "Oh!" and slightly raising her lip corners while Nathan continues staring at Patricia. 05:01 Patricia then begins to gently tickle Nathan, whispering, and raising her lip corners, while Nathan begins vocalizing and grabbing his shirt as they look at one another. 05:16 Patricia removes Nathan's pacifier from his mouth, raising her lip corners even more, opening her eyes wide, and whispering. Nathan begins making cooing mouth movements, at times vocalizing, keeping his mouth open, moving his head up and down, waving his left arm and stretching his trunk, while Patricia raises her lip corners, whispering and gently tickling Nathan. 05:20 Nathan briefly raises his lip corners, keeping his mouth open, while Patricia continues tickling Nathan with her lip corners raised. 05:26 Nathan briefly raises his lip corners again as Patricia continues tickling Nathan with her lip corners raised.

As illustrated above, Nathan's unique contributions to the positive flow of his dialogue with his mother are co-lived through changes in his face and body as Patricia also co-regulates her body and face in relation to Nathan's. While there are many

dialogical moments observed in this first visit when Nathan and Patricia join a convergent emotional orientation by mutually amplifying each other's contributions to the flow of their dialogue, there are also some moments in which Nathan's emotional positioning diverges from Patricia's. These moments are particularly interesting as they offer opportunities for Nathan and Patricia to more explicitly differentiate their unique positions in the flow of their emotion communication. Specifically, there are times when Patricia attempts to resume their previously co-created social playful frames by stretching Nathan's arms, talking with a melodic voice and forming big smiles on her face while Nathan remains calm and content, either looking at Patricia or looking at his surrounds. We refer to these moments of emotional divergence as **emotional asymmetry frames**, as illustrated below. Note how Nathan turns his head to the side and then contracts his facial muscles, while Patricia continues attempting to re-establish their stretching game by moving his arms up and down. It is only after approximately nine seconds of emotional divergence that Patricia begins to gradually surrender to Nathan's persistent position of not mutually amplifying his mother's efforts to establish a more playful frame (underlined and *italicized* below).

Visit 1, Segment 2. 09:44 Nathan *begins turning his head to his right side, opening his mouth* and *bringing his right hand to his mouth, looking at Patricia*, while Patricia stretches Nathan's arms as if continuing their stretching game. 09:53 Nathan *begins to raise his right upper lip, contracting his eyebrows together*, while Patricia continues stretching Nathan's arms up, but briefly pausing it each time Nathan contracts his eyebrows together.

Thursday, June 11, 1998.

Patricia and Nathan start their morning visit to the laboratory playroom welcoming a toy into their communication. With the introduction of the toy, both Patricia and Nathan begin to direct their attention to the toy, mutually amplifying each other's interest in integrating this new element into the flow of their dialogue. Specifically, Patricia holds a toy while Nathan looks at it intently, at times moving his arm toward the toy in a jerky manner, thereby forming the **interest in toy frame**. This inclusion of toys in the flow of their communication is emphasized because this frame will undergo significant transformations across the next 18 visits. The interest in toy frame is illustrated in the segment below. Note how Nathan welcomes the toy by gazing at it and moving his arm while vocalizing (underlined and *italicized*), thereby magnifying Patricia's initial effort to introduce the mirror to Nathan.

Visit 2, Segment 3. 00:00 Patricia is sitting on the sofa with Nathan sitting on her lap facing the room. As Patricia puts the Sesame Street mirror in front of Nathan's eyes, Nathan *looks at it, moving his left arm toward the toy* in a jerky manner, *vocalizing*. Patricia continues holding the mirror in front of Nathan's

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eyes, saying with a neutral tone of voice “Can you stop it?”, pressing the bottom located on the top corner of the mirror. As Nathan *moves his left arm towards the toy, looking at it*, he burps, spitting up. 00:21 At this point, Patricia says “Ooooooh!”, immediately putting the mirror on the floor, reaching out for the tissue box and starting to clean off Nathan’s face.

During this emotionally convergent moment involving the mirror, Nathan is afforded another opportunity to experience his self position as separate from his mother’s while both participate in the maintenance of the flow of their communication. At the same time, the **emotional asymmetry frame** continues to be observed in visit 2. As seen in visit 1, Patricia primarily attempts to engage Nathan in playful social frames while Nathan merely looks at Patricia or his surroundings, appearing non-captivated by Patricia’s ingenious attempts to play. Note in the following segment how both Patricia and Nathan persist on maintaining their divergent self positions during these emotionally asymmetrical moments, thereby further stressing their distinct self positions.

Visit 2, Segment 4. 11:44 As Patricia grabs his feet, rubbing them against one another and vocalizing “psh psh psh”, Nathan *brings his hands and eyebrows together, looking at Patricia*. 11:46 Patricia continues vocalizing “psh psh psh”, rubbing Nathan’s feet together, while Nathan *continues looking at Patricia*, relaxing his face and arms. 11:49 As Patricia finishes her “psh psh psh” vocalizations, releasing Nathan’s feet, grabbing his arms and looking at them, Nathan *continues looking at Patricia, turning his head slightly to his right side, opening his mouth*. Patricia begins stretching Nathan’s arms, *but as Nathan closes his mouth* (11:51), *looking at Patricia*, she puts his arms down. 11:54 Patricia begins touching Nathan’s face with her finger, vocalizing “tsh tsh tsh” in a synchronized way as *Nathan begins yawning*. 11:56 Patricia, at this point, begins watching Nathan yawn.

As illustrated in the four segments described above, Nathan and Patricia have been co-creating a variety of opportunities for Nathan to experience his self positions by co-regulating changes in their bodies and face in relation to one another. Of particular note, some of these self experiences are lived through moments of positive and convergent emotional co-orientation (e.g., **playful social frames** and **interest in toy frames**) as Nathan and Patricia mutually amplify each other’s contribution to the flow of their dialogue. At the same time that mutually creative moments are lived by Nathan and Patricia, they also experience divergent moments of emotional co-orientation (e.g., **emotional asymmetry frames**), which further capitalizes their distinct self positions lived in dialogue. We propose that both emotionally divergent and emotionally convergent moments are essential in Nathan’s process of self differentiation as these

allow Nathan to experience himself as separate from but also connected to his mother (a dialectical process suggested by Wallon).

Friday and Tuesday, June 12 and 16, 1998.

As Nathan and Patricia's first week visiting the laboratory comes to a close, the same multiplicity of frames continues to recur. Specifically, Nathan and Patricia continue amusing themselves in **social playful frames** as they re-establish and maintain their games involving Nathan's body while looking at one another, smiling, vocalizing and laughing. The main difference is that these frames now begin to occur in longer durations as Nathan and Patricia become more playful during these moments of positive connection. The segment below illustrates how Nathan and Patricia continue to closely co-regulate their bodily and facial changes in relation to each other's contributions, thereby participating in the increasing emotional intensity of the social playful frame. From the perspective of accentuating the intricate connection between Nathan's moments of emotion communication and his self experiences, we highlight Nathan's bodily changes by underlining and *italicizing* them. Keep in mind that these changes are mutually co-regulated between Nathan and Patricia, including the closure of the segment described below:

Visit 3, Segment 5. 03:14 Patricia begins rubbing Nathan's feet against each other more roughly, making a synchronized sound "tsch tsch tsch" with her movements and looking at Nathan. Meanwhile, Nathan continues looking at Patricia with a relaxed face and body, sucking on his pacifier. While Patricia continues rubbing Nathan's feet, vocalizing in a synchronized way, Nathan (03:16) produces a long, positive vocalization, looking at Patricia with a relaxed face and body. At this point, Patricia begins moving Nathan's legs up and down, saying "tsch tsch tsch", raising her lip corners and showing her teeth while pressing them together. 03:17 Nathan begins to gradually become more engaged in this face-to-face feet-rubbing game to the point of dropping his pacifier as he vocalizes (03:27). As Nathan vocalizes, Patricia continues rubbing his feet together, keeping her lip corners raised and talking to him softly. 03:29 Nathan begins raising his lip corners, vocalizing and protruding his tongue while looking at Patricia rubbing his feet together with her lip corners raised and talking to him. This goes on until 04:14. At this point, Nathan brings his face and body to a neutral position as Patricia also brings her face to a neutral position with Nathan.

The recurrence of this frame in its previous form combined with its increased vigor and duration may be indicators of the emotional significance of **social playful frames** in Nathan and Patricia's relationship. Most importantly, from the perspective of self development, the intensity of this frame is to a great extent promoted and sustained

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by Nathan's positive vocalizations combined with his smiles. The next example, extracted from visit 4, also demonstrates the emotional significance of the **social playful frame** as it highlights similarities across segments. Furthermore, note how their playful games revolve around Nathan's foot, which is carefully observed by Nathan.

Visit 4, Segment 6. 07:41 As Patricia approaches Nathan's left foot again, opening her mouth and looking at Nathan, Nathan *vocalizes, tonguing his lips, raising his lip corners even more,* and *shifting his gaze towards his left foot.* 07:43 Patricia stops kissing Nathan's left foot, looking straight into his eyes, keeping her lip corners raised and her teeth showing. At the same time, Nathan *begins opening his mouth while keeping his lip corners raised and his gaze towards his left foot,* touching Patricia's hand with his right hand and *resting his left hand on his left thigh.* 07:44 As Nathan *shifts his gaze toward Patricia's face with his lip corners raised, he also begins opening his mouth even more, vocalizing a long sound.* At the same time, Patricia opens her mouth, wrinkles her nose, maintaining her lip corners raised, looking at Nathan. 07:44:26 Nathan *slightly closes his mouth, producing another long sound* (a bit louder than the previous one), *maintaining his lip corners raised, his right hand touching Patricia's hand, his left hand touching his left thigh,* and *looking at Patricia.* Meanwhile Patricia maintains her lip corners raised, her teeth showing and she stops wrinkling her nose. 07:45 Patricia begins approaching Nathan's foot again, opening her mouth and looking at Nathan's foot, while Nathan *continues looking at Patricia with his lip corners raised, his right hand touching Patricia's hand and his left hand resting on his thigh.*

Once again, Nathan and Patricia participate in the mutual amplification of this playful frame by producing big smiles, vocalizing, and alternating their gaze between Nathan's foot and each other's eyes. It is important to note that gaze alternation constitutes an important element within this **social playful frame**. From the perspective of Nathan's cross-modal experiences, by alternating his gaze between looking at his mother and looking at his foot, Nathan is afforded the opportunity to see and feel the distinct experiences of his body moving as a result of his own actions (e.g., right hand touching his own thigh) in contrast to his body moving as a result of his mother's actions (e.g., Patricia touching and kissing his foot).

Interest in toy frame continues to recur during visits 3 and 4. As previously observed, Patricia quietly presents the toy within Nathan's sight, maintaining a neutral face and a relaxed body while Nathan looks at the toy held by Patricia. At times, Patricia whispers or talks to Nathan with a neutral tone of voice, while Nathan moves his arms toward the toy in a jerky manner. During visit 4, however, new actions begin to be observed within this **interest in toy frame**. Specifically, a form of excited interest is introduced by Nathan, as illustrated in the segment below. Of particular note,

movements of excitement become incorporated into this frame and other frames in later visits.

Visit 4, Segment 7. 00:00 Nathan is in a supine position, lying on the floor, while Patricia sits next to Nathan on his right side, holding the Sesame Street mirror in front of Nathan's eyes and softly saying "Do you see yourself in there? Do you see yourself in there?" Meanwhile Nathan *looks at the mirror, protruding his lips, kicking his legs* and *resting his hands on his stomach*. 00:04 Nathan begins to *get more vigorous, kicking his legs more intensely, waving his arms*, and *vocalizing short sounds, briefly raising his eyebrows while looking at the mirror*. Patricia continues holding the mirror in front of Nathan's eyes, finishing her sentence "... yourself in there?"

This dialogical pattern of emotion communication in which Nathan kicks his legs, waves his arms, protrudes his lips, and vocalizes while intently looking at the mirror continues for the next six minutes. Throughout these six minutes, Patricia gradually becomes quieter, holding the mirror in front of Nathan's eyes, at times gently touching his arm, his stomach or briefly raising the intonation of her voice as Nathan's actions become more vigorous. Not only the **interest in toy frame** begins to include the additional emotional quality of excited interest, but most importantly, from the perspective of self development, Nathan further explores his cross-modal experiences of seeing and feeling his movements (in this case, through the mirror toy), while being touched and talked to by his mother.

Moments of divergent emotional orientation between Nathan and Patricia also recur in visits 3 and 4 through the re-emergence of **emotional asymmetry frames**. Starting on visit 3, Nathan tends to be the one who initiates these moments of emotional asymmetry by either introducing an element of another frame or by not mutually amplifying Patricia's efforts to modify the flow of their emotional communication. The segment below illustrates in greater detail the dynamics just described. Starting at minute 04:18, note how Nathan maintains his body and face relatively inactive while Patricia attempts to engage Nathan in more vigorous play involving his feet.

Visit 3, Segment 8. 04:17 Patricia stops rubbing Nathan's face, looking down to his feet, and begins taking off his socks, talking to Nathan softly. At the same time, Nathan *opens his mouth, raises his lip corners* and *tongues his lip while looking at Patricia* who is looking at his feet. 04:18 While Nathan *continues looking at Patricia, he relaxes his lip corners, bringing them to a neutral position*, and *closes his mouth slightly*, as Patricia continues looking at his feet, taking off his socks and talking to him softly. 04:22 Patricia begins rubbing Nathan's bare feet together, moving his legs up and down, raising her lip corners and cheeks, bringing her teeth together, and vocalizing "tsch tsch tsch" in a

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synchronized way with her movements. Nathan, however, *continues looking at Patricia, maintaining a neutral face and slowly closing his mouth completely.*

Almost one week and half have passed. Nathan and Patricia have visited the laboratory playroom four times. Up to now, they maintained frames in multiple forms: playful, serene, relaxed, interest in the surround, interest in toys, and emotional asymmetry. Although these frames were maintained and recognizable across visits, the ways these recurred were not always the same, pointing toward their dynamic stability. At the same time that dynamic stability is observed in the flow of their emotion communication, another form of change is identified: the introduction of novelty (i.e., innovations). Specifically, in the last four visits, toys were first introduced during visit 2 and a new form of concentrated interest in toys emerged. As this novel emotional connection with toys began to be mutually recognized and maintained by the dyad, a new form of dynamic stability is dialogically co-created. Specifically, on visit 4, Nathan became more vigorously oriented to the toy while Patricia participated in this change by continuously showing the toy to Nathan. Lastly, from the perspective of Nathan's process of differentiation between self and other, there were moments in which Nathan and Patricia positioned themselves in emotionally divergent ways (i.e., emotional asymmetry frames).

What might happen next? Will these short-lived innovations observed during visit 4 remain as potential elements for new frames to be established by the dyad? Or will some of these innovations become expanded into new paths of emotional connection between Nathan and Patricia? And how do these changes in frames and emotions contribute to Nathan's self development? The unfolding of Nathan and Patricia's relationship continues to be described in the next pages.

Thursday, June 18, 1998.

This is their fifth visit to the laboratory playroom. Between this session and session 9, Nathan and Patricia start to consistently integrate objects as part of the flow of their emotion communication, as reflected in their use of objects in many of the previously observed frames. For instance, positive playful moments now predominantly emerge through toys. This innovated form of playful connection is now referred to as **social/object playful frame**. Other previously described innovations (i.e., gaze alternation observed in the social playful frame) are also incorporated into other frames, specifically, the **interest in toy frame**. Although brief in duration (shorter than one second), Nathan's gaze alternation between toy and his mother suggests that a distinct emotional quality is added to this frame. Specifically, while Nathan and Patricia's emotional orientation is now mutually directed toward the toy, they simultaneously maintain their serene social connection through Nathan's brief gaze alternations. The following segment illustrates the inclusion of gaze alternation within the **interest in toy frame**.

Visit 5, Segment 9. 04:31 Patricia starts shaking the rattle in front of Nathan's eyes and whispering something. Nathan, at this point, *looks at the toy held by Patricia, bringing his right hand to his chest and jerking his left arm*. 04:35 Patricia stops shaking the rattle, bringing it towards Nathan's left hand quietly. Nathan continues *looking at the toy intently, tonguing his lips*. 04:42 As Patricia adjusts the rattle into Nathan's left hand, she begins talking to Nathan with a neutral tone of voice. 04:42:19 Nathan *briefly looks at Patricia, looking back at the toy* (04:43:03) as Patricia continues adjusting the rattle in Nathan's hand.

In addition to these innovations, excitement begins to pervade the **interest in toy frames**. Although excitement was first introduced as an innovation by Nathan in visit 4 while he looked at the toy mirror, it did not constitute a consistent and predominant component of this frame. At visit 5, however, in almost every instance of **interest in toy frame**, Nathan kicks his legs and waves his arms while intently looking at the toy held by his mother.

In sum, starting on visit 5, Nathan and Patricia appear to begin shifting their self positions in the context of their emotion communication from a primary focus on blissful social games to an emerging focus on interest in toys. This is indicated by the variety of object-related connections that start to pervade the frames Nathan and Patricia co-create. In these dialogical contexts, Nathan intensely waves his arms and legs while looking at the toy held by his mother. At the same time, Nathan and Patricia are able to maintain their social connection by engaging in gaze alternation between toy and each other.

Between June 19 and 26, 1998 (Visits 6 and 9)

As certain frames are beginning to merge together, a familiar dynamics is recaptured by the dyad. Specifically, the relatively forgotten visual exploration of the surrounding starts to re-emerge as Nathan looks around the room while Patricia watches him quietly. In these visits, despite the dyad's increasing emphasis on toys, visual exploration of the surrounding (first observed in visit 1) does not include toys. Furthermore, the **emotional asymmetry frame** starts to appear more often as Patricia attempts to re-establish social playful connections with Nathan and Nathan appears uninterested in playing with Patricia. Starting at visit 6, emotional asymmetry also includes a pull between Patricia's efforts to maintain Nathan's interest in the toy while Nathan becomes persistently more interested in mouthing his own hand. This innovation in the quality of the **emotional asymmetry frame** is illustrated in the following segment with the mirror toy:

Visit 6, Segment 10. 07:10 Nathan *continues mouthing his right hand* and begins *looking away from the mirror* held by Patricia, slightly *contracting his inner eyebrows together*. At the same time, Patricia continues talking to Nathan softly,

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touching his left hand and holding the mirror within his sight. 07:10:23 Nathan *relaxes his eyebrows and continues looking away from the mirror* and *mouths his right hand*. 07:11 Patricia gently shakes the mirror while touching Nathan's left hand, looking at him, but Nathan *continues looking off to the side intently* and *mouths his hand*.

As with previously observed emotional asymmetry frames, the segment above explicitly highlights the divergent self positions Patricia and Nathan occupy: Nathan's interest in mouthing his hands and Patricia's interest in playing with her son and the toy. Once again, emotional asymmetry frames appear to serve as another dialogical context in which Nathan and Patricia more explicitly distinguish their self positions in the flow of their emotion communication. In this case, despite Patricia's persistent efforts to redirect Nathan's attention to the toy, Nathan continues to mouth his hands while looking away from Patricia and the toy.

Tuesday, June 30, 1998: From now on.

In the next ten visits (visits 10 through 20), a new frame and a few previously observed frames begin to consistently co-exist. Nathan and Patricia have developed a new routine characterized by their mutual participation in **social playful frames** in the first three to four minutes of their interaction followed by their gradual settling into **absorbed interest in toy frames**. The latter now presents the prevailing characteristic of Nathan's quiet concentration on a toy or his hand, mouthing it while facing back Patricia. At this point, Patricia participates in the interest in toy frames by quietly watching Nathan, providing postural support or gently touching Nathan's back, legs and head. Of particular note, the **interest in toy frames** provide additional opportunities for Nathan to *simultaneously* feel his hand (or toy) in his mouth as a result of his own actions and feel various pressures on his body as a result of being touched by his mother.

At the same time, **emotional asymmetry frames** continue to recur as Patricia attempts to re-establish social playful frames throughout the visit and Nathan maintains his concentrated interest in toys or his serene connection to Patricia by looking at her while mouthing his hand. In fact, starting on visit 11, each time Patricia places Nathan in a supine position while he is mouthing a toy, Nathan begins crying, arching his back, kicking his legs and stiffening his body. As Patricia immediately repositions Nathan back in the sitting position, Nathan calms down and resumes his concentrated manipulation of the toy. From now on, the **interest in toy frame** begins to predominantly emerge as Nathan sits upright, back facing his mother and manipulating a toy, and Patricia quietly watches Nathan, providing postural support. This dynamics is illustrated in the segment below extracted from visit 19 (July 21, 1998). Nathan, at the time of this visit, is 16 weeks old. Note how he asserts his self position of a focused

interest in the toy by protesting to his mother's touching of his feet (screaming and kicking his legs):

Visit 19, Segment 25. 03:13 As Patricia continues inspecting Nathan's toes, Nathan *starts screaming out loud* and *kicking his legs while holding a toy*. 03:16 Patricia stops inspecting his toes and says "Now what?" looking at Nathan with a serious face. At the same time, Nathan *stops screaming, turning his body to the side, bringing his feet together* and *the toy to his mouth*. Patricia starts to watch Nathan quietly.

As visit 20 approaches, Nathan and Patricia appear to have just navigated across a phase shift in their emotion communication from a primary emphasis on mutually amplifying each other's interest in blissful social games to exploring and facilitating Nathan's increasing focus on himself and his toys. In other words, over time, Nathan and Patricia transformed the landscape of their relationship from a predominant emphasis on playful social frames, followed by the gradual introduction of toys as well as the emergence of emotional asymmetry frames, and finally Nathan's increased focus on mouthing his toys and/or his hands. It is important to note that as Nathan became increasingly more focused on the toys and/or his body, emotional asymmetry frames started to occur more often. We argue that frames constituted dialogical opportunities for Nathan to further explore his various self positions, which ranged from mutually participating in playful endeavors with his mother to persisting on mouthing his hands or toy and emotionally diverging from his mother.

Dialogical Change Processes: Familiar Variability and Innovations

An important finding described in the detailed microgenetic analysis of Nathan and Patricia's moments of emotion communication refers to the levels of change observed within the real-time scale (also discussed in detail by Fogel, Garvey, Hsu & West-Stroming, 2006; and Pantoja, 2000). First, there were the changes that appear to maintain the dynamic stability of the frame, referred to as **familiar variability**. These involved nuances in the way Patricia and Nathan interacted with one another while sustaining a pleasant connection with one another or the various ways in which Nathan and Patricia played with toys. We suggest that familiar variability allowed Nathan and Patricia to mutually recognize the meaningful patterns of emotion communication that composed the landscape of their relationship. Furthermore, from the perspective of Nathan's self development, familiar variability served as a background against which Nathan's contributions to the maintenance (or not) of the flow of their dialogue was punctuated, thereby facilitating Nathan's experience of differentiating his sense of self from others through dialogue.

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There were also the deviations that appear to add a new quality to the frame, and consequently a new quality to the dyad's relationship. When first introduced, these changes within the frame were regarded as **innovations**. This is because these changes were noticeably distinct from the usual pattern maintained by Nathan and Patricia, at the same time that they were not completely modifying the dyad's familiar ways of being in dialogue. It is important to note that the identification of innovations in the flow of dialogue requires an historical analysis of the moment. In other words, a particular action cannot be determined as an innovation unless that action is situated in the historical process where it emerged. Take the example of Patricia and Nathan early encounters of the interest in toy frame, usually characterized by Nathan looking at toy while Patricia held it within his sight. A new level of emotion communication is observed when Nathan begins to produce long and loud vocalizations, vigorously moving his body while Patricia holds the toy. As Nathan and Patricia begin to co-create an excited joyful connection through toys, an innovation emerges, adding a new quality to the previously existing frame (i.e., interest in toy frame). The identification of this innovation is only possible if one is able to recognize the dyad's existing dialogical patterns involving toys (i.e., familiar variability of the frame). Furthermore, innovations allowed for Nathan and Patricia to creatively transform the flow of their emotion communication, while also constituted another opportunity for Nathan to experience his unique self contribution to their relational history.

As noted in the microgenetic analysis described above, when innovations were further expanded by Nathan and Patricia, a developmental change in the flow of the dyad's dialogue was observed characterized by Nathan's persistent exploration of his hands and toy through mouthing, while Patricia quietly provided postural support to her infant's exploration. In dynamic systems terms, periods in which a given system is thought to be most susceptible to change, leading to a re-organization of the system, is referred to as **phase shift** (e.g., Fogel et al., 1992; Thelen & Ulrich, 1991). Were the dialogical changes in the frames indicative that Nathan and Patricia were co-creating a phase shift? And, in the process of transforming the landscape of their emotion communication, was Nathan afforded with multiple opportunities to explore his self positions in relation to his mother?

As discussed in great detail above, we argue that as Nathan and Patricia actively participated in the maintenance and transformation of the frames, Nathan experienced various self positions in relation to his mother's, fostering the development of his sense of self in dialogue. As suggested by Wallon, an infant's self distinction from others is accomplished dialectically in the midst of his emotional experiences of relating with others. In our case study, Nathan gradually experienced a sense of self as unique and distinct through his moments of emotional convergence as well as emotional divergence with his mother. In fact, as Nathan became increasingly more focused on his body and the toys (as reflected in the predominance of mouthing in the interest in toy frames),

moments of emotional divergence between Patricia and Nathan increased. Are emotional asymmetry frames an indicator of a phase shift in the relationship? If so, could the emotional asymmetry frame serve as foreshadow to an upcoming change? This is a question that emerged through our microgenetic analysis that deserves further exploration.

The data also illustrated Bakhtin's notion of simultaneity in space and time, discussed earlier. While engaged in various dialogical formats (i.e., frames), Nathan and Patricia simultaneously occupied different bodies located in different spaces – bodies that moved and changed in relation one another. In other words, Nathan's embodied experiences emergent in the context of frames allowed for the development of the distinction between self and others while remaining in dialogue. Furthermore, Bohm's emphasis on the bodily and proprioceptive aspects of emotions lived through dialogue was also prevalent in the data. Recall that according to Bohm, dialogue is continuously emerging as participants engage in emotional communication with others (or what we called elsewhere *alive communication* – Fogel & Garvey, 2006). As demonstrated in the data presented above, Nathan and Patricia continuously participated in the maintenance and transformation of their dialogical patterns of emotion communication (frames), which included moments of emotional divergence between them that further punctuated their unique self positions with respect to the current flow of their dialogue. We thus argue that our data support the contention that an infant's bodily experiences of differentiation from and through others can be found in the early dialogical exchanges between mothers and her infants during the first months of life.

Concluding Remarks

Many theoretical approaches to emotions and self exist, each yielding to diverse methodologies of investigation. Strongly influenced by dynamic systems theory and the writings of Henri Wallon, Mikail Bahktin and David Bohm, we emphasized that emotions, self and communication are inseparable processes that flow together in the day-to-day occurrences of dialogical partners such as Nathan and Patricia. Emotions were viewed as an essential component of self development as they simultaneously fostered a sense of connection with and differentiation from others. Furthermore, self was viewed as dialogical experiences of co-being – co-being in patterns of emotion communication (we called frames). When examined through continuous real-time, microgenetic analyses of frames, we contend that the approach described herein yielded to a fruitful understanding of how emotions and self change and develop over time. For those developmental researchers concerned with the study of emotions and self development, we propose that a commitment to describing in great detail the changes in emotions and self positions as a part of the emergence of frames is helpful. As we discussed earlier, a dialogical view of the self does not deny that individuals feel and perceive their part in communication processes as “their own” contribution. The case

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study presented above favors this dialogical perspective as we suggest that “being” is always and at all time a “being-in-relation.” Relationships open us up to a multiplicity of possibilities, including self possibilities, while at the same time fostering a sense of connection with others.

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