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Children as intentional agents

The contribution of sensitive caregiving on the way to the development of theory of mind

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Abstract

This paper presents a review of the processes involved in the development of the theory of mind in children through an intersubjective approach. More specifically, the development of the theory of mind was examined in the context of the child-caregiver attachment. For this purpose, studies examining the links between various theory of mind variables (e.g.: joint attention, symbolic play, language skills) and parent-child interaction variables (e.g.: maternal sensitivity, reflective functioning) were reviewed. In summary, variables pertaining to the parent-child relationship, reflective functioning and maternal sensitivity in particular, are argued to be the key determinants of a child's affect regulation and self organization.

Introduction

One major aspect of human social understanding is the theory of mind which explains how an individual responds not only to others' actions, but also to aspects of the others' mental states such as beliefs, desires, intentions, feelings and attitudes (Baron-Cohen, 1995). During the last two decades, the concept has been the focus of cognitive and developmental psychology (Wellman, 1993; Baron-Cohen, Tager-Flusberg & Cohen, 2000; Perner, 1991). Researchers in this area hold different views in regard to the origins or development of theory of mind. However, the currently dominant view holds that there exists an innate capacity for theory of mind; and that children, even when they are very young, are able to attribute their internal states as causes of their actions (Baron-Cohen, 1995; Leslie, 1994). In this article, after providing a brief review of prominent approaches concerning theory of mind, the characteristics of parent-child interaction linked to the child's *mentalization capacity* will be explored relying upon previous theories which focus on social development in understanding theory of mind (Fonagy & Target, 1997; Goldman, 1993; Gopnik 1993; Wellman, 1990).

Discussions on theory of mind are somewhat limited due to the fact that researchers have concentrated more on beliefs and desires, and have rather neglected the influence of emotions. This might be because belief-desire reasoning seems to be more connected to causal understanding and also to making predictions. However, as Fonagy, Gergely, Jurist and Target (2004) argued, emotions might also stand for intentional stances as beliefs and desires and have common representational characteristics. They also distinguished feeling states from beliefs and desires in the sense that emotions are processed with accompanying changes in physiological arousal and corresponding

subjective appraisals. Moreover, emotions are easier to detect and, in the case of some basic emotions, are argued to be innate (Ekman, 1992). Considering these interpretations, Fonagy and colleagues defended the intersubjectivist view of theory of mind and proposed the term *reflective function* referring to theory of mind (Fonagy & Target, 1997). More will be examined regarding this concept later in this article; however I find it important to briefly mention other ideas on theory of mind to assure a basic understanding of the different explanations of the concept.

Theories on Theory of Mind

There is an ongoing debate on the development of children's acquisition of theory of mind, and on the operationalization of the concept for research purposes (see Baron-Cohen et al., 2000, for a detailed review). The *modular* approach – as explained by Leslie (1994) and Baron-Cohen (1995) - asserts that there is an innate learning mechanism specifically devoted to social understanding. These authors stressed the evolutionary and biological origins of theory of mind and paid little attention to social influences. Briefly, modular theorists argue that at around three years of age, children achieve a level of cognitive sophistication that allows them to understand the intentions behind the actions of others. The modular approach views theory of mind as an ability that is inherent and then later activated.

Other theories focus more or less on aspects of social learning. One of them, the *theory-theory* approach (Gopnik, 1996) assumes that children develop theory-like interconnected mental concepts based on their experience in life. Theories that are built automatically and innately are, however, also 'tested' in social interactions. In that sense, this approach claims that the developed theories are innate although, as mentioned, the child's social environment serves to instantiate these mental theories. Perner (1991, p. 11) refers to this process as the "dramatic realization of mind" and explains that "the individual switches from the mentalistic theory of behavior to representational theory of mind."

The other social learning approach, *simulation* theory (Harris, 1992; Goldman, 1993) suggests that children simulate or imagine themselves to be the other person, and consider how they would feel, think and act in that person's circumstances. Simulation theorists hypothesize that mental representations arise from introspection, or in other words, mind reading. However, this theory does not account for how children come to think of their own selves, which is an important point that this theory falls short of.

From the perspective of developmental psychopathology, none of these theories explain the full picture, because they have not considered the child's own capacity to construct a mental 'theory' but rather emphasize only what the biology or the environment provides him with - no less and no more. On top of that, the child's affective interactions, specifically with the primary caregiver, play a major role in determining their later functioning (Slade, 2009; Fonagy & Target, 1997; Meins, Fernyhough, Russell, & Clark-Carter, 1998), and a more comprehensive account should explain the mother's contributions to the development of the child's theory of mind.

In this regard, considering the impact of early relationships, Fonagy and Target (1997) proposed the term *reflective function* to explain children's "ability to respond not only to others' behavior but also their conceptions of their own beliefs, feelings, beliefs, pretense, plans and so on" (p. 679). The term reflective function refers to the cognitive and affective processes that are hypothesized to be the precursors of theory of mind. According to this view, the caregiver is a means for the child to discover the world and incorporate the new information into the child's mental system. Also, the nature and the quality of this learning and development process are very much influenced by the dynamics of the dyadic interaction. Thus, interactions with the primary caregiver provide a strong base for the child's developing representational mind from which the child's social cognitive abilities evolve and assist the child to think and understand the self and the other in terms of mental states (Slade, 2009).

Caregiver Sensitivity and Secure Attachment in the Development of Mentalization

Early attachment theorists defined caregiver sensitivity as the caregiver's ability to be aware of the child's signals and to evaluate and respond to them in a meaningful, accurate, and appropriate way (Ainsworth, Bell & Stayton, 1974). However, it is rather difficult to objectively measure sensitivity; for this reason it is somewhat of a generic concept and different frames of reference have led to different conceptualizations of sensitivity (Belsky, Rosenberger & Crnic, 1995). As Meins (1997) argued, the term *sensitivity* covers a range of behaviors, and it is difficult to interpret which ones are more integral to the concept. On the other hand, the relationship between caregiver sensitivity and attachment patterns is clearer. Previous research consistently found maternal sensitivity to be associated with the development of a secure bond between the child and the caregiver (Andrea & Kirkland, 1996; De Wolff & van Ijzendoorn, 1997; Bakersman-Krannenberg, van Ijzendoorn, 1995). With respect to this, Fonagy and Target (1997) proposed the concept *reflective function* as being almost analogous to caregiver sensitivity in terms of predicting attachment security. They utilized Dennett's concept of *intentional stance*, (Dennett, 1987) which refers to the abstract level of the mental system that is an evolutionary adaptation through which individuals make causal attributions about others' actions and internal states. Dennett (1987) argued that at the level of intentional stance, individuals are able to make inferences about others' mental states that may not reflect the actual reality. The terms, intentional stance (Dennett, 1987) and reflective function (Fonagy & Target, 1997) refer to functionally similar concepts especially with their emphasis on social experience. However, these two views explain the developmental processes of social understanding in somewhat different ways. Dennett considers intentional stance to have evolutionary origins, whereas reflective function refers to the quality of early interactions. I favor the latter one on which more will be explored in this article.

In order for children to develop abstract conceptions of external reality, first of all, they need corresponding mental representations. In this regard, Fonagy and colleagues (2004) explained the development of theory of mind, or as they refer to it, *reflective function*, in relation to early interactions with the caregiver. They argued that as children initially form mental state representations, their mother reflects their internal states back in dyadic interactions. Therefore children are exposed to two very similar notions of the experience, one is that of their own and the other is the mother's conception of that experience. The two are actually the same experience but are different in 'theorizing'. Gradually, with the mother's appropriate mirroring, the children gain awareness of their own internal states and also of internal states of others, which is an important step in their acquisition of theory of mind.

The caregiver's capacity to monitor and reflect the child's moment-to-moment states has been associated with maternal sensitivity in the sense that maternal reflective function is a strong predictor of both secure attachment and adaptive, coherent mental organization (Fonagy, Steele, Steele, Higgitt, & Target, 1994; Fonagy, Steele, Moran, Steele, & Higgitt, 1991; Gergely, Nadasdy, Csibra, & Biro, 1995). Maternal reflective capacity might be considered much the same as Bion's (1962) conceptualization of the mother as a *container*. According to Bion's model (1962), sensitive mothers contain or keep the child's negative affect, and then respond back in an affectionate, accepting manner. Thus the child becomes able to tolerate negative emotional states and is supported in this way in the exploration of the external world.

It could be argued that sensitivity predicts later mentalization capacity only if we are referring to the caregiver's capacity, or efforts to interact with the child's mental states and reflect such internal experiences in an accurate and regulative way (for a comprehensive review, see Social Biofeedback Theory, Gergely & Watson,1996; Zeanah, Benoit, Hirshberg, Barton, & Regan, 1994). And in that sense, caregiver sensitivity has a major role in the development of mentalization (Sroufe, 1990; Gergely, 2001) and also in

facilitating the child's adaptive development (Carpendale, & Lewis, 2006).

The Caregiver's Role in the Child's Transition from Physical to Intentional Agents

It used to be the commonly held belief that children are born as passive organisms with no apparent capabilities. However, during the last three decades, evidence has shown that children have built-in perceptual and representational capacities that promote adaptation to their biological and social environment (Stern, 1985). Such innate mechanisms serve not only to assist the children's physical survival, but also to enhance their affective development. Especially children's emotional sensitivity and ability to match their actions with the corresponding changes facilitate the formation of affective communication with the caregiver.

In the first few weeks following birth, children develop an awareness of their physical self. Their ability to detect changes in the bodies they are in contact with, and to match these changes with their ongoing responses provides an understanding of their self as a physical being (Leslie, 1994). It is very important that such a process provides an initial ground for future emotional development. Affective communication with the primary caregiver, (usually the mother), begins to develop from the beginning of life and is essential for the regulation of children's emotions (Fonagy et al., 2004; Slade, 2009). As the mother gains more experience with the child's responses, she becomes more familiar with, and therefore better in modulating the child's emotional states. The mother's attention to the child's different physical responses in different situations contributes to contextualizing stimulus-response interactions and gradually leads to a more consistent and reliable caregiving. On the other side, over time, children come to understand that their physical self is able to initiate causal influences in their environment (Neisser, 1988; Gergely & Watson, 1996; Sroufe, 1990). Therefore, it is clear that mothers play an active role in children's discovery of themselves as physical agents. Sensitive monitoring of physical needs and then responding back to these signals immediately communicates the mother's caring and availability, which is essential for the child's development of healthy emotion regulatory abilities (Stern, 1985; Sroufe, 1990).

Early emotion regulation is achieved with the mother's assistance. Parental affect-mirroring is crucial such that this communication provides the child a framework to rely on, especially in novel and distressing situations. As the mother carefully reads the child's displays of emotion and reflects them back to the child in a warm, affective and communicative way; these experiences become more meaningful and more tolerable. Moreover, affect mirroring by means of specific vocal and facial expressions captures the child's attention and encourages further reciprocal engagement. In that sense, appropriate parental reflection is an important feature for not only the development of a secure attachment system (Zeanah et al., 1994) but also the development of the child's coherent self organization (Fonagy & Target, 1997; Gergely & Csibra, 1998).

Affective communication in the early phase of development involves nonverbal behaviors. Sensitive caregiving, in that sense, can be characterized as the matching behaviors of smiling, vocal expressions with face-to-face interactions and direct eye contact (Beebe, Lachmann, & Jaffe, 1997; Tronick, 1989). Certainly, the timing of reflection is important such that temporal proximity of one response to the other makes it easier for the child to associate the two. In other words, temporal contingency in the mother's affect mirroring represents consistency and organization for the child. Initially, the mother is more likely to be the coordinator and the child to be the receiver of the dyadic interaction. As the child gradually becomes more sensitive to contingent communication, the interaction becomes more automatized such that the child both expects to be mirrored and begins to respond to maternal reflections.

As the name mirroring implies, correspondence of two responses in content facilitates the synchrony in interaction, and also provides comfort for the child to experience the actual state (Malastesta, Culver, Tesman, & Shepard, 1989). As the mother

becomes more able to differentiate and model the child's affective signals, the child feels more secure to express emotions expression, which then fosters the development of self-understanding (Stern, 1985). In that sense, synchrony in dyadic interaction is essential for an adaptive psychological development. Previous research found that communication between depressed mothers and their children consistently involves negative emotions; therefore these children are more likely to experience emotion exchanges that are less contingent to their state (Fonagy et al., 1991). Mismatch of internal state and information from the environment, like this, leads to disturbances in children's cognitive and affective development (Murray, 1992; Fonagy & Target, 1997).

Gergely and Watson (1996) proposed the social biofeedback theory of emotion regulation that also contributes to our understanding of the development of mentalization. According to the model, children, back and forth, test the caregiver's emotional responses to catch the consistently occurring responses. Contingency testing serves children's need for stability and security to the extent that they maximize their ability to interpret both their own, and others' affective states. In this process, the caregiver's role is to read and interpret the child's internal states accurately. As the child's vocal or postural emotion expressions find consistent matching responses, internal experiences come to be represented externally and are observable. Therefore, sensitive caregiving in this non-mentalistic developmental phase precipitates the child's self-understanding and later the child's meaning-making system. (Gergely & Watson, 1996; Gergely, 2001, Fonagy et al., 2004).

Sharp, Fonagy and Goodyer (2006) pointed out the impact of maternal reflection in determining the child's perception of actual experiences with respect to the internalization process. Whether it represents the actual experience or not, children perceive the mother's reflective affect displays as their primary emotional state. Incongruence between the actual experience and the reflected affect distorts the child's self-understanding and leads to the development of a *false self* (Winnicott, 1967). Besides categorical congruence, sensitive mothering ensures marked affect mirroring that is characterized as reflective behaviors that are the exaggerated versions of the child's realistic affect expression (Fonagy, Target, & Gergely, 2000). As the mother reflects emotional states in a contingent but imperfectly matching way, children gradually become able to differentiate the mother's emotional state from theirs, which is an important developmental process in terms of the formation of secondary mental state representations (Fonagy et al., 2004; Sharp, Fonagy, & Goodyer, 2006). Fonagy and Target (1997) explained appropriate affect mirroring in a similar way. They argued that in response to the child's experiences of negative affect, the sensitive mother produces reflective behaviors involving mixed emotions with vocal, facial, and gestural displays of the experienced affect. This not only makes the situation more tolerable, but also facilitates the child's emotion regulation abilities (Fonagy, 1995). Therefore, appropriate parental reflections require both categorical congruence and perceptual markedness for psychological well-being and coherence in mental organization. Infants whose mothers do not use marked expressions in their reflections tend to develop disturbed self perceptions and self regulation, and this in turn makes them vulnerable for borderline psychopathology (Fonagy, 1995; Fonagy, Target, & Gergely, 2000).

So far, I have briefly reviewed basic characteristics of sensitive caregiving especially in terms of affect regulation. How then, does maternal sensitivity impact later development of theory of mind? The process is as follows. The mother's highly contingent but imperfect affect mirroring serves the child's development of a sense of understanding of their experiences and fosters the feeling of efficacy to regulate their environment. Such an interaction in the early dyadic relationship provides children the secure base from which they explore the world (Sroufe, Carlson, Levy, & Egeland, 1999). With the sense of security and agency, children are inclined to engage in diverse experiences in their physical environment. Moreover, children feel more comfortable to interact with people other than the mother, which is important for the generalization of early experiences (Dunn,

1996). Therefore we can state that, firstly, secure attachment and early sensitive care provide the appropriate psychosocial environment in which children develop a basis for mentalization. (Meins, 1997 ; Meins, Fernyhough, Russell, & Clark-Carter, 1998 ; Fonagy & Target, 2002). Secondly, sensitive mothering, with marked affect mirroring qualities facilitates the formation of second order mental representations. As children perceive the mother's reflections as being a different expression of their actual affective state, they form a separate mental representation of this state. This secondary representation is an abstract form of the primary affect and is still linked to actual experience. As Gergely and Watson (1996) emphasized, this process makes subjective mental states cognitively more accessible, which then fosters children's sensitivity to internal states in general (Gergely & Csibra, 1998 ; Stern, 1985). However, it is important to note that this state of mind can be considered as a readiness state for the development of intentionality and is very important in the sense that it sets up the early framework for children's sociocognitive development. (Gergely, 2001).

9-Month cognitive revolution

At around 7-9 months of age, children develop major skills that are considered important for later metacognitive development. At this stage, they gain an increased awareness of the physical constraints of the external world and realize that others' actions are dependent upon these constraints. Such an understanding helps them to differentiate rational actions from nonsense ones. Gradually, with increased sensitivity to relations beyond their own, children acquire the ability to infer goal states from simple means (Gergely & Watson, 1996; Gergely & Csibra, 1998).

These developmental changes are also manifested in dyadic interaction. As infants gain increasing motor abilities, they interact with the external environment more frequently. However, although children are more interested in exploration from this point on, they still check for the mother's availability and try to match their experiences with the mother's. The mother's availability, in this process, is the key to the child's feeling of security, but the mother also serves as an important source of information for the child's exploration (Ainsworth et al., 1974; Bowlby, 1980). As the child encounters a novel or especially distressing situation, the mother's responses provide reflections about that experience. As Hobson (2002) termed it, a *relatedness triangle* is formed in which the child and the mother attend to a third object. In that relatedness triangle, the child continuously searches for the mother's matching responses with those of their own experience. Awareness of the shared affect with different goal states regarding a third object allows the child to the understand that individuals might hold different views about the same reality (Wellman, 1993).

Infants' newly emerging skills of joint attention, gaze following, protodeclarative pointing and use of gestures constitute important landmarks of social-cognitive development. First of all, in order to repair the mismatch in the communication, the child continuously looks for maternal signals to organize experiences depending on the mother's ascribed meanings. In time, the child improves in detecting and interpreting mental states, both their own and others' (Neisser, 1991; Wellman, 1993). Secondly, the mother's reflective function and cooperative behaviors provide the child a sense of security that fosters further exploration, and also provides support accordingly. This pattern of interaction, which can also be termed secure attachment, promotes the child's sense of agency and self-esteem (Carpenter, Nagell, & Tomasello 1998 ; Stern, 1985). Therefore, it can be argued that these newly developed skills can be utilized to support maternal reflection and pave the way for more sophisticated cognitive development.

Maternal responses in joint attention are critical for the child's internalization process. As I mentioned above, optimal affect mirroring is characterized by sensitive monitoring of the child's state of mind, and by reflecting it back in a highly contingent manner but with imperfect expressions (Fonagy & Target, 1997; Fonagy et al., 2004). In negative situations, the mother attends to the child's affective state and reflects it back to the child in a more tolerable way, for example

with accompanying sweet voices. Therefore, maternal sensitivity supports the child in regulating the negative affect and remain in distressing situations, which in turn gives the child the sense of power, agency and the necessary courage for new experiences. In positive situations, the mother's exaggerated displays of emotion encourage the child's engagement in the situation and therefore it is more likely that the child receives more pleasure from reinforcement (Sroufe, 1996).

Attachment literature has generally associated maternal sensitivity and responsiveness (Isabella, 1993). As might be expected, a sensitive caregiver is also responsive to the child's physical and emotional needs, attends to their mental states and responds in a consistent, unambiguous way. This kind of interaction strengthens the child's causal attributions of ongoing experiences, which is important for the development of an organized meaning-making system and an integrated sense of self (Meins, 1997). In that sense, Meins (1997) conceptualized maternal *mind-mindedness*, referring to the mother's ability to think of the child as an intentional agent, which is practically very similar to the mother's reflective function (Fonagy & Target, 1997). Meins (1997) conceptualized maternal sensitivity as a process during which the mother treats the child as an *intentional agent* with their own interests, beliefs and desires even when they actually have not yet developed these mental abilities. These mothers, as Meins (1997) argued tend to observe the child's internal states carefully and scaffold the child towards the goal state. The mother's cooperation and regulative responses make it easier for the child to adapt to ever-changing states and to move forward accordingly. This, in turn, supports the feelings of agency and adequacy. The mother's representation of the child as a mental being is naturally communicated in the mother's interactions with the child, and so the child gradually develops a more abstract understanding of the self and the other (Meins, 1997; Meins et al., 2002).

In consideration of the facts stated above, the first year of life is very critical in shaping the sociocognitive development. Although children's thinking and reasoning skills function in non-mentalistic terms, both social and cognitive skills acquired early in life prepare them for further cognitive sophistication (Fonagy & Target, 1997 ; Gergely, 2001 ; Wellman, Phillips, & Rodriguez, 2000).

Empirical evidence so far supports the pivotal role of sensitive caregiving in the development of mentalization capacity. In recent research, Sharp and colleagues (2006) examined the impact of maternal attribution styles and the nature of reflective behaviors on the child's mentalization capacity. They found that the mother's inaccurate mirroring and biased attributions lead the child to develop distorted mental organization. Moreover, it was found that insensitive and coercive mothering makes them highly vulnerable to conduct disorders (Beauchaine, Gatzke-Kopp, & Mead, 2007). Most characteristic deficits in social understanding have been observed in autism, a developmental disorder marked by primarily reciprocal social communication and theory of mind deficits (Baron-Cohen, 1995). However, early interventions based on the child's specific needs can lead to promising improvements in the child's social adaptation (Baron-Cohen et al., 2000). For example, Capps, Sigman and Mundy (1994) reported that securely attached autistic children, when interacting with their caregivers, engage in more looking, pointing behaviors, make more eye contact and use gestural communication with reference to a third object than insecurely attached ones. As Guralnick (1998) pointed out, this suggests that the mother-child interaction is a major element in early social environment, and sensitive caregiving in reciprocal-dyadic interaction might help autistic children to improve and better adapt to the world. Cognitive faculties that are essential for the development of theory of mind begin to develop very early in life even without revealing observable *deficits*. Therefore, preexisting deficits (of autistic children) can at least be improved to a certain extent through the process of the parent-child interaction.

Adaptive psychological development, which can be considered a component of mentalization (Fonagy & Target, 1997), is also mediated by the quality of early interactions. Mothers of securely attached children allow their children to freely explore and reflect on their mental states. The child's efforts to find

meaning in the mother's mind and to follow corresponding actions help to differentiate internal states from observable behaviors. This process is important because the safer children find it to explore the other's mental state, the more they will tend to contact with and understand internal experiences. Insensitive mothering, on the other hand, might result in pathological outcomes in that sense. Insecurely attached children are more likely to experience disturbed intersubjective exchanges in dyadic relationships. Specifically, anxiously attached children tend to focus more on their mental states and are more likely to be overwhelmed by their negative emotions. On the other hand, children with avoidant attachment are more likely to escape from the mother's internal state, which also leads to distancing from their own states. In general, children with disorganized attachment have rather more different and complex characteristics such that their experience in dyadic interaction involves incontingent and inaccurate maternal responses. Those children develop intentional stances but lack self-organization and coherence (Fonagy & Target, 2002; Fonagy et al., 2000).

After the emergence of basic representations of self and others, typically developing children, with cumulating experience, become able to infer about others' actions and goal states. Associating internal states with the observable actions helps children to understand that others might have prior intentions or desires before they act on these mental states. Emergence of such related but separate representations of internal states and actions enables children to infer about mental states even in the absence of observable actions. Therefore, gradually, children improve in predicting others' subsequent behaviors (Gergely & Csibra, 1998). Obviously, the emergence of this naive representational system is closely connected to interactions with the caregiver in the early stages of life. In response to the mother's reflective behaviors, children begin to organize their experiences, which in time makes it easier for them to integrate various aspects of experiences into stable schemas. Then the affective and physical components of collections are formed into basic mental causation and, generalized and applied to others, as Stern (1985) called it *a-way-of-being-with.*

Children whose mothers are abusive or seriously neglectful have difficulty with establishing mental coherence in their cognitive organization (Dennett, 1987). These children are more likely to hold distinct representations of their self - all of which are different from their actual self. Similarly, these children tend to have contradictory attributions for others which are in accordance with their perceived self (Fonagy et al., 2000). In that sense, sensitive caregiving facilitates children's ability to appropriately respond to others' affective states. Distorted causal connections between separate mental states bias both their understanding and interaction with others (Wellmann, 1993). In a similar vein, Meins (1997) argued that the mother's empathic, mind-minded responses increase children's prosocial understanding and help them improve in goal-directed/goal-corrected actions. This means that the child strives to reach a goal and certainly there are times when the child's desires are not met. In such cases of failure, sadness and frustration emerge as the usual effect. However, the child might also remain engaged and generate other goal-directed actions based on the interpretations of their previous response (Wellman et al., 2000). Operating on their own motivational states, with goal-directed and goal-corrected actions, provides valuable experience for children to understand their own unobservable internal states. Sensitive mothering ensures ongoing assistance for children to act on flexibly and organize their environment (Stern, 1985).

At around 2 years of age, with the development of basic language, the child's emerging mental structures are organized into a more complex and strong form (Smith, 1996). The quality of language that the children have been exposed to influences their understanding of self and *other*. Meins (1997) argued that the referential rather than expressive language acquisition style enhances the child's abilities to mentalize. As referential speech revolves around the other object, the child is provided with more explicit, unambiguous and meaningful information helpful for concept formation. Research findings (Meins & Fernyhough, 1999; Tomasello, 1992; McElwain, Booth-LaForce,

Lansford, Wu, & Dyer, 2008) provided confirming evidence which additionally points out the role of maternal sensitivity for the child's adoption of the referential acquisition style. Caregivers become reliable sources of information as long as they carefully attend to the child's own needs and interests and respond appropriately. Then, the mother becomes the regular reference for the child to understand the world. Also, securely attached children are encouraged to engage in argumentative, referential talk and allowed to make attributions (Meins, 1997; Smith, 1996). It is also easier for the child to grasp the mother's communication and the more their talk is coherent, descriptive and rich in verbal attempts, the better the child gets at associating novel information into existing structures (Meins & Fernyhough, 1999).

Concerning parent-child interaction, sensitive mothers are more likely to focus on mutual interests, as in joint attention. As the mother flexibly orients the speech back and forth to different aspects of ongoing communication, the child is directly exposed to both the 'object' and different attributions in the shared context. This experience is really important in the sense that the child comes into contact with different perspectives of the third party. Gradually, the child develops perspective taking ability and comes to understand context-dependent attributions (Fonagy et al., 2004; McElwain et al., 2008).

Structural quality of language also affects the child's cognitive development. Sensitive mothers tend to use descriptive, rather than prescriptive language, which provides children flexibility and coherence in their attributions (Ward & Carlson, 1995). Even in very early interactions, sensitive mothers tend to interpret their children's vocalizations and respond in a clear and descriptive manner. This communication pattern encourages the child to become involved and this increases the child's feelings of self-efficacy. Sense of agency in social interactions, in turn encourages the child's further attempts to initiate joint attention and social exchanges with others.

Mothers' monitoring skills have considerable influence on both language development and abstract thinking. In the very first place, careful monitoring brings about appropriate responding. Besides the accuracy of content, the level of understanding communicated is important. The use of jokes, gestures and affective expressions conveys greater mental space devoted to interaction (Meins & Fernyhough, 1999). Fonagy and colleagues (1991) found that the mother's flexible use of highly informative mental state terms (i.e. think or know) is associated with the sophistication of the child's mentalizing skills. Therefore exposure to abstract words makes the child more equipped in the development of mentalization capacity (Fonagy et al., 1991).

Contributions of qualified care: The child becomes a mentalizing agent

The ability to hold mental state representations which was defined as mentalization capacity (Fonagy & Target, 1997) develops around 4-5 years of age. With this rather complicated theory of mind system, children gain the ability to integrate the external and internal reality. Children are, at this time, fully aware that these representations are not the same but also they are able to symbolize and keep these representations without dissociating one from the other. Fonagy and Target (1997) argued that up to this point, children interact with their internal states and the external reality in two ways: The more primitive form, is the *psychic equivalence mode* in which the child expects subjective experiences to match with the physical reality. The second is the *pretend mode* in which the child is aware of the mismatch of the subjective experiences with the physical reality, as in the symbolic play. Mentalizing ability emerges with the development of more complex cognitive faculties and the child becomes able to integrate these two modes of relating internal versus external experiences (Gopnik, 1993).

Mentalization enables children to think that others' mental states might also be different from the objective reality. Therefore, the child's psychological and physical experiences are arranged into a meaningful organization system, allowing the child to predict and to have control over the environment. Moreover, the emerging representational system supports the child's individuation process (Fonagy et al., 2004) that requires the child to mentally

separate from the caregiver and develop an independent sense of self. The caregiver has an active role in this process such that the mother mentally represents the child's internal state, and reflects it back to the child (Harris, 1989; Meins et al., 2002). In other words, the mother provides a mental schema that the child uses as a template to act on (Fonagy et al., 2004; Sharp et al., 2006).

Beginning from the very early years, children receiving sensitive caregiving are better at interacting with the mother's mind (Gopnik, 1993; Slade, 2009). In that sense, parental affect mirroring is associated with the child's social understanding. As long as the mother is able to reflect internal states markedly and accurately, the child is able to find himself in the mother's mind (Fonagy & Target, 1997; Fonagy et al., 2004 ; Slade, 2009). The impact of early caregiving cumulates to that phase providing the child well-grounded abilities for mentalization.

Play is another means for children's development and use of higher order cognitive abilities, especially at 4-5 years of age. It is easier for mothers to explore their children's fantasy world in play settings. In that sense, symbolic play, in which children pretend to live in a fantasy world, is an important means of expressing internal states. Similarly, mothers can interact with their children's imagined world, and help them to expand and structure their representational world. Sensitive mothers back-and-forth represent reality versus pretended. Whenever the imagined situation becomes frightening, the mother scaffolds the child, and supports them in effectively regulating the negative affect (Slaughter, & Gopnik, 1996). Thus not only the negative affect becomes more tolerable for the child, but also the child, even in play, is exposed to effective coping skills for a similar situation (Stern, 1985, Winnicott, 1967; Fonagy et al., 2004).

Lewis and Boucher (1988) observed children in symbolic play setting. They found that securely attached children are better in perspective taking than insecure children such that it is easier for secure ones to integrate another person's suggestion into play setting. Lewis and Boucher (1988) argued that children's perspective taking ability is associated with their attendance of others' mental representations. Also, as Meins and her colleagues (2002) argued, beginning from the earlier ages of the child, sensitive or *mind-minded* mothers tend to use more referential language when interacting with the child. As might be expected, children of these mothers easily participate in symbolic play and they tend to be more confident to take the mother's perspective during the play.

Leslie (1987) proposed that pretend play, in which the mother and child engage in role taking activities, is an early indicator of the development of theory of mind. While pretending, the child takes the perspective of a third person (or object) which requires a rather more sophisticated cognitive development. In order to accomplish this, the child has to have a basic understanding of the other's mental state and also has to isolate mental states from external reality. During pretend play, the mother continuously monitors the child's mental state and reflects it to the child vis-a-vis the third object, which makes pretend play an essential activity for sociocognitive development. The child's representational development can also be inferred in pretend play setting. Children that are stuck in the *psychic equivalence mode*, are unable to pretend since their subjective experiences have to match the external reality (Gopnik & Astington, 1988). As an example, the child can not role-play a bus driver while actually not being a bus driver. However, if the child is able to hold separate representations for internal experiences versus external reality, two states can be disentangled, allowing the child to act as a bus driver while still remaining a child (Gopnik, 1993).

Inability to move to the mentalization stage might lead to serious psychopathology in adult years. In cases of borderline personality disorder, patients could not develop cues for either self or social understanding, and they lack mentalizing abilities. With internal and external reality being undifferentiated, they depend in an extreme degree on external reality but still use cues that are not conditionally appropriate (Fonagy, 2005; Fonagy et al., 2004). A similar deficit presents itself in a different form in autism. Autistic children are unable to form representations of internal states. Thus, observable rules of the

external world are perceived to be the absolute reality, which prevents pretending (Baron-Cohen, 1995).

Interpersonal interactions and mentalization

Children's interpersonal interactions provide them the means to develop self and social understanding (Sroufe, 1990; Bowlby, 1980). Meins (1997) argued that social interactions expose the child to different perspectives in various situations. The child, then, acquires more and more experiential knowledge that accumulates and is organized into complex mental structures. Also, causal talks in triadic interactions support the child's intentional understanding (Slaughter & Gopnik, 1996).

Previous research found confirming evidence that the quality of social interactions, in which the mother is the primary figure, affects the development of mentalization. In their research, Dunn, Brown and Beardsall (1991) reported that children's performance on the false-belief task, a measure of theory of mind (Harris, 1989), is highly associated with the nature of the mother's interactions with older siblings. The child observes the mother's reflective function in other interactions as the third party, and is exposed to different views in the same situation. This kind of experience provides the child with an opportunity to interpret these different views and organize them in a meaningful way. Moreover, the mother's cooperation as also observed in other interactions helps the child to generalize and strengthen accumulated experiences (Astington, 1996). Similarly, Sroufe (1990) found that securely attached children are better perspective takers and they tend to show greater empathy in interpersonal relations. Development of skills for empathy and perspective taking is related to early emerging interactional patterns such as face-to-face interactions (Tronick & Cohn, 1989), joint attention (Wellman, 1993), symbolic play (Meins et al., 1998) and conversation styles (Appleton & Reddy, 1996); which are mostly moderated by maternal involvement. In the course of development, children of sensitive mothers develop more adaptive social skills which enable them to easily cooperate with peers and compensate for miscommunication or negative situations (Elicker, Eglund & Sroufe, 1992). Meins (1997) also pointed out that sensitive mothering fosters the child's self-efficacy, which in turn increases the initiation to engage in social exchanges with others. As the child accumulates different experiences with different people in different contexts, it becomes easier for them to differentiate the internal states of their own and others' from external reality. Mother's scaffolding, in this process, provides a secure base from which the child develops agency. Additionally, the mother supports the child's exploration process and helps the child to organize experiences into meaningful representations (Fonagy et al., 1991).

Conclusion and Implications for Adaptive and Pathological Development

Theory of mind, which could also be referred to as reflective function, permits children to understand not only others' actions but also their internal states. Acquisition of this representational ability enables children to organize their experiences into meaningful constructs, which makes the external world more predictable for them (Bolton & Hill, 1996).

Recent theorizing on the development of mentalizing emphasized the inherent capacities, however in this article I have briefly reviewed empirical and theoretical accounts for the early emerging capacity within the caregiving context.

Certainly, biological predispositions affect the developmental processes; nonetheless, as explained above, the quality of early caregiving has the major role in the development of the child as a mentalizing agent (Fonagy et al., 2004). Regardless of whether we consider the development of reflective function from a cognitive perspective (Schachter, 1992) or from a psychodynamic perspective (Fonagy et al., 1997), it is a mutually agreed point that early interactional patterns serve as a template for later development. In that sense, the present article argues that the quality of caregiving - in particular the degree of maternal sensitivity -

contributes greatly to the child's development of social understanding.

Although, maternal sensitivity is a problematic concept to define clearly (Belsky et al., 1995), I agree with previous explanations (Fonagy et al., 2004) that conceptualize sensitivity in a more global sense. In that sense, as mentioned above, sensitivity is associated with the mother's affect mirroring skills, which leads the child to represent internal states accurately without being overwhelmed. In the course of development, maternal reflective function, even indirectly, improves the child both socially and psychologically, which further facilitates the child's understanding of self and others.

All in all, despite the fact that theory of mind has only recently been considered as a module in its own right, and has only recently begun to be discussed in clinical terms, it is clearly an important concept that should be studied more not only to understand different developmental pathways, but also to better understand the broad mental organization underlying psychopathology. Although there have been studies on borderline personality disorder (Fonagy et al., 2004) and autism (Baron-Cohen et al., 2000), future research may uncover representational organization of the minds of patients with different psychological disorders, that might reveal more to us and enable us to develop more specific interventions.

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