

A QUALITATIVE APPROACH OF THE ASSOCIATION BETWEEN THE TODDLER'S ATTACHMENT STYLE AND THE DYADIC INTERACTION WITH THE MOTHER

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ABSTRACT. The quality of toddler's experience with the caregiver impacts the structuring of the internal working models of attachment (Bowlby, 1980, 1988), further used as means of comfort and security, and prototypes for later close relationships. Using inductive qualitative techniques, our study aims to describe specific schemes of mother-toddler interaction, for each of the attachment styles. Semi-structured interactions of 27 mother-child dyads were videotaped in their familiar environment and the films were qualitatively analyzed, for each group of toddlers previously identified as having the same attachment style. The interactions of secure toddlers and their mothers were marked by synchronized actions, joy of interacting, closeness, and security. Mothers of ambivalent children displayed a more dominant action, with discordances between the social and psychological level of communication. Avoidant toddler-mother dyads presented a higher balance between their relational spaces, maintaining contact, with a low level of intimacy. The absence of a coherent strategy defined the interaction between the toddlers with disorganized attachment and their mothers. Our results confirm previous findings in the field of attachment in early childhood and add up to these results by providing a methodology to approach these interactions and the use of video recordings as ways to develop interventions aiming to increase the attachment security.

Keywords: *mother-toddler interaction; attachment styles; video analysis, qualitative research*

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ZUSAMMENFASSUNG. Die Qualität der Interaktion von Kleinkindern mit ihren Bezugspersonen wirkt auf die Strukturierung der inneren Arbeitsmodelle (Bowlby, 1980, 1988) ein. Diese Arbeitsmodelle werden als Mittel in der Suche nach Trost und Sicherheit und als Prototypen für spätere enge Beziehungen benutzt. Unsere Studie nimmt sich vor, Mutter-Kleinkind-Interaktionen für jeden Bindungstyp durch induktive qualitative Techniken zu beschreiben. Dazu wurden die halbstrukturierten Interaktionen von 27 Mutter-Kind Zweiergruppen in ihrem gewohnten Umgebung auf Video aufgezeichnet. Danach wurden die Aufnahmen für jede Gruppe von Kleinkindern, die zuvor die gleiche Bindungsart aufgewiesen hatten, einer qualitativen Analyse unterzogen. Die Interaktionen zwischen sicher gebundenen Kindern und ihren Müttern sind von synchronisierten Handlungen, Freude an Interaktion, Nähe und Sicherheit geprägt. Die Mütter von ambivalent gebundenen Kindern zeigen sich dominanter in ihren Handlungen, wobei auch Widersprüche zwischen der sozialen und psychologischen Kommunikationsebene zu beobachten sind. Das Gleichgewicht zwischen den Bindungsräumen von vermeidenden Kindern und ihren Müttern war besser, sie halten Kontakt, jedoch mit kleinem Vertrautheitsgrad. Die Interaktion zwischen desorganisiert gebundenen Kleinkindern und ihren Müttern wies den Mangel an einer kohärenten Strategie vor. Unsere Ergebnisse bestätigen vorausgegangene Untersuchungen über frühkindliche Bindung und ergänzen diese durch die Erstellung einer Analysemethode dieser Interaktionen und durch die Verwendung von Videoaufnahmen als Entwicklungsmöglichkeit für Interventionen zur Verbesserung der Bindungssicherheit der Kinder.

Schlüsselwörter: Mutter-Kleinkind-Interaktion; Bindungstypen; Videoanalyse; qualitative Untersuchung

Introduction

Early attachment and the characteristics of the interaction with the caregiver in early childhood are important indicators for interpersonal behavior, child's developmental progress and mental health later in life (Tryphonopoulos, Letourneau, & DiTomasso, 2014). The quality of early caregiving was linked to several mental health problems in adolescence and disrupted affective communication at 18 months of age was an important predictor for personality disorders and conduct symptoms at the age of 18 to 22 years (Lyons-Ruth, 2008), thus the importance of early identification of problematic features of the interaction between parent and child is underlined.

During the repeated experiences with the caregiver, the child develops internal representations of the attachment relationship, defined as working

models of attachment (Bowlby, 1980, 1988), structured within the various experiences and interactions (Ainsworth et al., 1978) and depending on their quality. These inner models will be further used as a source of comfort and security throughout the lifespan, but also as a prototype for the later close relationships of the individual (Schaffer, 2005; Snyder & Lopez, 2007), including the relationship that one establishes with one's own child (Madigan et al., 2015). In other words, attachment is a good predictor for the later development until adult age, with a high impact upon the representation of the self, the other, and the world, resulting in the level of psychological and relational health (Frey, Beesley, & Miller, 2006; Grossmann et al., 2002; Sroufe et al., 2005; Waters et al., 2000). Attachment security represents the basic trust in the attachment figure's availability and sensitivity in times of danger, distress, as well as in the capacity to offer protection, comfort, and appropriate response for the child (Ainsworth et al., 1978).

Attachment security cannot be measured directly and it can only be deduced by what is accessible and observable (Solomon & George, 1999). In this manner, by observing patterns of interaction and children's reactions through the Strange Situation laboratory procedure, Ainsworth (1970) described three attachment styles: secure (type B), insecure avoidant (type A), and insecure ambivalent/resistant (type C). A fourth category, the disorganized attachment style (type D), was later added by Main and Solomon (1986, 1990), for children who would not match one of the three above mentioned patterns.

Securely attached children display enjoyment in their interaction with the caregiver and also constantly use the caregiver as a secure base to explore the environment (Humber & Moss, 2005), they seek and accept comfort from caregivers (Johnson et al., 2010). Children with ambivalent attachment style do not show trust in the parent's availability, they show high distress when separated by their attachment figures and do not show decrease in their reactions when reunited with them. Also, the ambivalent child does not initiate exploration of the environment and seems to lack independence. The avoidant attachment style manifests as inability of the child to rely on the attachment figure, hostility, and indifference, rejection of the parent. The child with disorganized attachment style manifests confusion in the presence of the parent, anger and rejection alternating rapidly and unpredictably with attempts to please the parent (Andreassen & Fletcher, 2007), attempts of the child to control the parent, either by showing care or by punitive behaviors (Humber & Moss, 2005). These patterns of behavior and affect were also found in orphan children (Collins, 2008), but in these children disorganized attachment was more prevalent than in the general population. Disorganized attachment was linked to the child's experience of the parent as either frightening or

nonresponsive to his signals of distress (Collins, 2008). These patterns of maternal behavior, linked to child's attachment, were identified in young children as well as preschoolers and school aged children (Humber & Moss, 2005).

One of the first questions when referring to attachment is related to the factors that favor the development of a secure base relationship, as opposed to an insecure one. If the initial research indicated mother's sensitivity and responsiveness (Ainsworth, 1973) as having a crucial impact on child's attachment security, later results related to main behaviors of the caregiver added new dimensions: mother's prompt responsivity to child's distress (Crockenberg, 1981; Del Carmen et al., 1993); moderate and well adapted stimulation (Feldstein et al., 1995); interactional synchrony (Isabella & Belsky, 1991; Isabella, Belsky, & von Eye, 1989; Leyendecker et al., 1997); involvement, warmth, and responsivity (Bates, Maslin, & Frankel, 1985; O'Connor, Sigman, & Kasasi, 1992), tendency to focus on and respond to child's cues as if they were reflections of the child's feelings (mind-mindedness, Meins, 2013), in attunement to the child's cues and the child's internal states. Van den Boom's study (1990) draws attention to the attentive maternal behavior to her child's exploration, as a prerequisite for the child's synchronization and security.

Children's insecure attachment was linked to other indicators in caregiver's interactive behaviors. Intrusive parental style, characterized by overly stimulative, highly controlling interactions, was related to children's ambivalent attachment (Madigan, Moran, & Pederson, 2006), while avoidant attachment is associated with caregiver's lack of responsivity and low level of involvement (Vondra, Shaw, & Kevinides, 1995).

More recent studies focus on identifying attachment insecurity predictors from describing mother-infant interaction patterns (Beebe et al., 2010), as the quality of early dialogue between caregiver and child was found to be even more predictive for mental health problems compared to attachment classification (Lyons-Ruth, 2008). A wide microanalysis of the interactional and communicational process was conducted for 84 mother-infant dyads, playing in laboratory settings, at 4 months and again at 12 months of age. Coding and systematizing observed behaviors led Beebe's team to find categories of information, regarding: attention orientation of the two actors, affect, touch, and spatial orientation.

A later paper of the same American psychiatrist (Beebe et al., 2012) describes her approach as based on dyadic systems, as an alternative to the long tradition of assessing maternal characteristics impact on child's attachment security. Beebe suggests examining individual contributions of both mother and child, within different patterns of dyadic interactions involved in attachment development (Beebe et al., 2012; Beebe & Steele, 2013). The focus of all author's

work was bringing up to clinicians' attention the possibility of predicting attachment security at 12 months of age, with a high interest in the disorganized attachment style, from the dyad's interaction microanalysis at 4 months.

Based on previous research results, our rationale for the study was the need to further address the specific behavioral features of the mother-child interaction for each of the four attachment styles of the children, in order to enrich our knowledge of the differences and similarities of children's behaviors, maternal behaviors and synchronous behaviors within the four styles. This would be useful for both research in the field of attachment theory and for the practice focused on the development of interventions targeting the increase of attachment security in children.

Context and Purpose of the Study

The current paper is derived from a more extended doctoral research on the intergenerational transmission of the attachment models and focuses on describing mother-child patterns of interaction observed in the dyads' natural environment (at home), associated with each of the four attachment styles of the children (secure, insecure ambivalent, insecure avoidant and disorganized).

The purpose for describing these patterns of interaction holds a theoretical and a practical side. On one hand we aim to contribute to the attachment literature, while on the other hand to provide an accessible base for developing specific guidelines for professionals, so they can identify the patterns of interaction in a home setting, compare them with those specific to the secure model and make the first steps in changing from an insecure to a secure relationship between caregivers and their children (Ionescu, 2013).

Method

Sample

A number of 27 mother-child dyads were involved in our study. They were selected from a larger sample used in the more extended research mentioned above, based on their willingness to participate in the videotaped interaction with their child. Therefore, we used a convenience selected sample in the further data analysis.

The age range of mothers participating in the study was 24 to 42 years (mean=32 years, SD=3.53), all of them from urban areas. In terms of level of education, most of the participants in our study were highly educated persons (holding university degree of higher) and only two of them had high school

education. With respect to their professional membership, the mothers belonged to the following professional domains: exact sciences (jobs like mathematicians, engineers, economists), education, literature and linguistics, social sciences (sociologists, psychologists, historians), law, medical professions (nurses, medical doctors) and a small number unqualified professions (workers), thus proving the sample belonging to the middle class in terms of level of income. All the participant women were married, and most of them (82,5%) had one child, while a smaller number (17.5% of the total) had two children.

Regarding the pregnancy preparation, 12 of the mothers took Lamaze childbirth classes (44.44% of the total number), three attended other childcare programs (11,11%), while the rest of them did not take any structured lessons. A percentage of 51,7% of the mothers were on maternal leave and 48,3% returned to work 5 to 21 months prior to the research period.

The children were aged between 14 to 35 months (mean age 22.15 months) and 40.74% of the total number were females.

Measures

Child attachment style

The need to find a right assessment method for the attachment style in the first three years of life is important, given the crucial importance that this period has for child development (Bransford, Brown & Cocking, 2000). Research in neuroscience shows an accelerated brain development before this age, with a progressive decrease of its plasticity by the age of ten (Riley, 2003). Proper assessment supports the development of effective early interventions for optimizing the level of attachment security. Most of the studies in the field use Ainsworth's Strange Situation standardized laboratory procedure (Ainsworth et al., 1978) for assessing children's attachment with their mothers by analyzing the reactions they have during the eight different separation-reunion episodes. However, besides being time consuming, the procedure is stressful for both child and mother and several alternatives were developed for use in practice and research. One such relatively new alternative to the Strange Situation is the Attachment Q-Sort (AQS) (Waters & Deane, 1985, Andreassen & Fletcher, 2007), a technique less time consuming, simpler when analyzing data, yet holding the advantages of the mother-child interaction observation. Starting from this instrument and using data collected in more countries, a research team led by Kirkland and Bimler (Bimler & Kirkland, 2002; Kirkland et al., 2004) began in 1999 the development of a shorter and more accessible version of the AQS: Toddler Attachment Sort-45 (TAS-45). TAS-45 is a new observational

measure of attachment strategies of children in interaction with the mother and stranger, displayed in the home setting and its initial purpose was the assessment of child-parent attachment quality for 16 to 39 months children in the US national Early Child Longitudinal Study-Birth Cohort (ECLS-B; Andreassen, Fletcher, & Park, 2006). A comparison of various available measurements of attachment made by Tryphonopoulos, Letourneau & DiTomasso (2014) reveals several advantages of the TAS-45: the training required for use is less extensive than in the case of other measurements, the scoring is brief (10 minutes), though data collection is lengthy (60-90 minutes).

Several studies have been conducted for TAS-45 validation on different populations (Andreassen & Fletcher, 2007; Costea-Bărluțiu, 2010, 2016; Spieker, Nelson, & Condon, 2011, Titik Muti'ah, 2012). It has been used for the first time in Romania and studied for psychometric proprieties (a pilot study) by Costea-Bărluțiu (2010) in her doctoral research (published in Costea-Bărluțiu, 2016). The author found the instrument to be a promising alternative for the assessment of attachment in toddlers and she concluded that the measure can be successfully applied on Romanian population, also recommending the enlargement of the studied group for further investigation of the psychometric properties of the measure (Costea-Bărluțiu, 2010, 2016). Considering the advantage of the ecological validity of TAS-45 results, by allowing researchers to assess dyadic interaction in their homes, we also adopted the TAS-45 for evaluating children's attachment to their mothers (Ionescu, 2013). The items of the instrument are grouped in eight categories, reflecting various dimensions of attachment, such as: comfort in cuddling, cooperation, enjoyment of company, independence, attention seeking, separation distress, avoidance of others, demandingness, moodiness. With respect to psychometric properties, Costea-Bărluțiu (2010, published in 2016) reported an internal consistency of .60 to .95 for the various dimensions of attachment measured with TAS-45. Zaslow et al. (2009), Spieker et al., (2011) in Tryphonopoulos, Letourneau & DiTomasso (2014) found an interrater reliability of 82% for the whole measure, with .83 correlation for security scores and .92% for dependence scores and 100% agreement on classification of children according to their attachment style. Though these results are promising, further analysis is needed in order to prove the validity of the instrument for the assessment of attachment in toddlers.

The forty-five items of the instrument are sorted in two phases for each of the children assessed and subsequently a profile is established based on the scores for the eight categories. The child's profile is compared with the prototypic profile for each of the attachment styles and the child's attachment style is thus determined. In order to avoid the subjectivity bias, two raters should complete the measure for each child, but this procedure was not implemented in the current research.

Mother-child interaction

In order to describe the specific features of the interaction between mothers and their children, a semi-structured free play situation was set up at the dyads' home. Each mother was invited to play freely with her child, as they do it in the everyday life, with a set of toys offered by the researcher. Some of the toys that were available for the dyad to play with were: toddler puzzles, large pieces of construction blocks, a plastic frog with its baby frog, other plastic animals, and a baby doll. The sequence of interaction lasted around 10 minutes.

The set of toys consisted of items selected in order to be appropriate for this age (1-3 years), to be appealing and simulative for the child, to allow the mother and the child to perform a wide variety of different activities. The interaction was video recorded in order to perform the subsequent analysis.

Data analysis procedure

All movies were qualitatively analyzed by using ATLAS.ti 6.0 software for identifying main categories of behavioral elements and the relations between them. The aim was to describe certain patterns of mother-child interaction for each observation phase, for each group of children previously evaluated using the TAS-45 (see Ionescu, 2014) as having the same dominant attachment style. The software offers a powerful tool for qualitative research, allowing in-depth analysis of the video material.

We selected 2 minutes 'time frames' out of each movie videotaped for the mother-child interaction. The two-minutes time frames selected were matched by attachment style and were analyzed together with ATLAS.ti for extracting the dominant codes and the relations between them. Thus, the four identified patterns, one for each children attachment group (secure, insecure ambivalent, insecure avoidant and disorganized) were obtained and will be discussed below.

The qualitative analysis with ATLAS.ti implies the upload of each of the two-minutes video into the main file generated by the software (called 'Hermeneutical Unit'), then using the console to start, stop and select sequences (video 'quotations') for labeling them (the 'coding' procedure, summarizing the content of the selection).

For the ease of understanding and structure of information, we used in each code's label a letter indicating the actor performing the action (codes starting with 'M' refer to mother's behaviors, codes starting with 'C' refer to child's actions, while those starting with 'MC' refer to a synchronized action of mother and child. The acronym f1 represents an indication of the phase in the semi-structured observation.

Results

Children's attachment styles and maternal characteristics

Of all the children included in our study, 40.7% were securely attached with their mothers, while the percentage of ambivalent children (29.6% of the total number), avoidant and disorganized children (14.8% each of the two types) was rather high compared to those reported by other large scale studies in the US that used the same measure for attachment (NICHD, Andreassen & Fletcher, 2007). The distribution we found was however similar to the one that Costea-Bărluțiu (2016) found on a sample of 75 Romanian children coming from similar backgrounds. However, the percentage of insecurely attached children was rather high for a sample of typically developing children, coming from typical family backgrounds, with high education, from medium class Romanian families. As the distribution seems to be similar to the one found by other authors on Romanian samples, it should be further investigated on larger samples, in order to find out if this is a culture-specific feature or other factors such as the measure we used or the sample selection method contributed to these results.

Table 1. Distribution of attachment styles

| | secure | ambivalent | avoidant | disorganized |
|--|-----------|------------|-----------|--------------|
| <hr/> | | | | |
| Maternal participation in a prenatal Lamaze course | | | | |
| Yes | 4 (14.8%) | 4 (15.4%) | 3 (11.5%) | 1 (3.8%) |
| No | 7 (25.9%) | 4 (15.4%) | 1 (3.8%) | 3 (11.5%) |
| <hr/> | | | | |
| Child's gender | | | | |
| Male | 7 (25.9%) | 5 (18.5%) | 2 (7.4%) | 2 (7.4%) |
| Female | 4 (14.8%) | 3 (11.1%) | 2 (7.4%) | 2 (7.4%) |
| <hr/> | | | | |
| Total | 40.7% | 29.6% | 14.8% | 14.8% |

We found no significant differences depending on maternal participation in Lamaze prenatal courses ($Z=-.65$, $p>.10$), as tested with Mann-Whitney test for independent samples, thus showing that this variable did not influence significantly the distribution of children's attachment styles in the sample we analyzed.

Also, we found no significant differences between children's attachment style based on their gender ($Z=.55$, $p>.10$) and thus we will discuss the qualitative data derived from the video analysis for each of the attachment style, without considering other maternal or children characteristics, that in the current investigation had no effect on the distribution of attachment styles.

Features of the interaction for the secure attachment style (type B)

The secure attachment style was identified in 11 children from the group constituted for investigation. The coding operation of the mother-child interaction for the free play phase led to the development of 41 codes, of which 14 had a frequency³ greater than 5 occurrences, with a maximum of 31 occurrences (of the 'mother asks the child questions' behavior), followed by the child's response ('the child responds to the mother'), with a frequency of 18 occurrences. We noted that for the most frequent codes, action refers successively, both to interventions of the mother and to synchronized answers of the child.

Presented below is the list of the 14 codes with a frequency higher than 5 occurrences.

Table 1. The list of codes with a frequency higher than 5 occurrences within the free game phase of secure attachment

| |
|--|
| Code: M_f1_the mother asks the child questions {31-0} |
| Code: C_f1_the child answers to the mother {18-0} |
| Code: M_f1_the mother talks to the child {12-0} |
| Code: MC_f1_the mother and the child cooperate to accomplish the task {12-0} |
| Code: C_f1_the child talks, asks {11-0} |
| Code: C_f1_the child looks at the toy {9-0} |
| Code: M_f1_the mother encourages the child {9-0} |
| Code: MC_f1_the mother and the child play with the same toy {9-0} |
| Code: M_f1_the mother encourages the child {8-0} |
| Code: M_f1_the mother talks in parallel with the stranger {8-0} |
| Code: C_f1_the child plays alone {7-0} |
| Code: C_f1_the child interacts with the stranger {6-0} |
| Code: C_f1_the child takes the toy {5-0} |

For this situation, we can synthesize the types of interaction observed in the 11 films containing the secure type, in the following schema (Figure 1).

³ The frequency is shown in the codes box between the brackets following the code description.

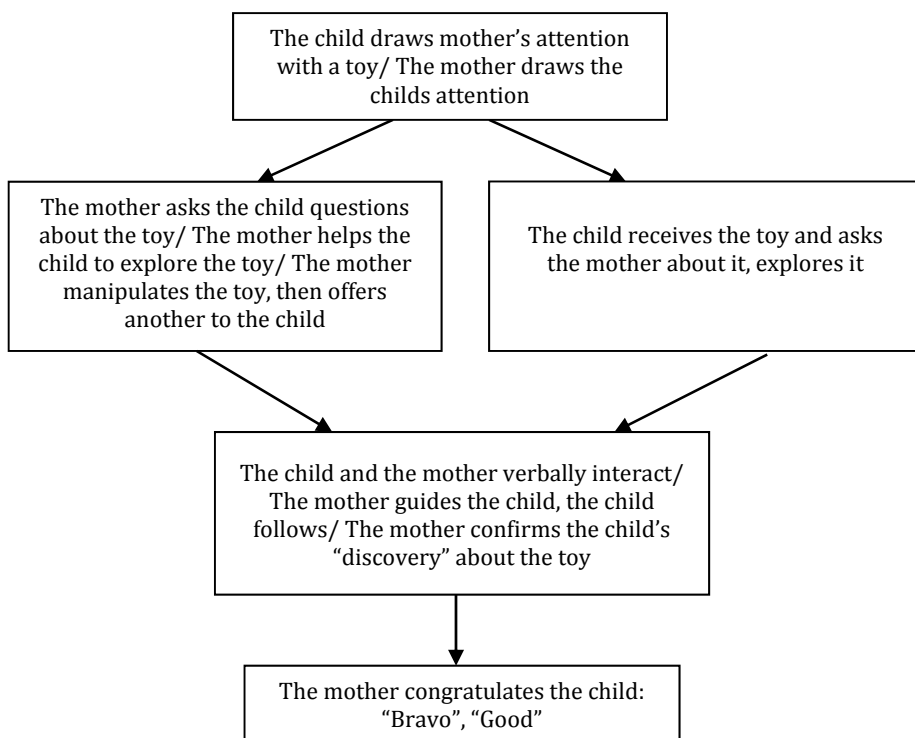


Figure 1. Mother-child interaction schema during free play involving the securely attached children

The mother or, often, the child, initiates the action by pointing at an object (toy). Then the mother asks clarifying questions to keep the relationship, starting from what the child had initiated (for example, the child shows his mother the frog and goes 'croak-croak' and his mother replies with a question: 'What is this? A frog?'). Even if the mother was the initiator, the child follows the same pattern by asking in her turn, in order to maintain contact.

What follows is a series of parallel transactions (questions and answers) as invitations to examples giving, exploration (the child, being curious, asks the mother 'What is that? 'What is there?' and she answers, explains, then asks the child to name additional characteristics of the object, or invites her to explore it: 'Look! What color is the end?'; 'How does it do that?'; 'What do we do with the little car?'). The sequence of successive interactions, with initiation and response, is repeated. The mother repeats the child's words a lot, as if she confirms to her that what she said is good ('cow goes moo'; 'yes dear, moo'). Mother also often praises or encourages the child, frequently giving her positive feedback ('Bravo!'; 'Well done ...'; 'How beautiful!'; 'X knows').

Usually in this free play phase *interaction seems to be able to continue endlessly. The simple joy of relating seems to represent in itself the fulfillment of the objective of obtaining attention, closeness, and security.* In fact, the interaction between the two even continues uninterrupted until the researcher stops them.

Features of the interaction for the ambivalent attachment style (C type)

The ATLAS.ti processing of the 8 recordings of the ambivalent children, for the free play phase, led to a number of 41 coded behaviors. Out of them, 15 had a frequency higher than 5 occurrences, with a maximum of 23 occurrences (the code ‘mother asks the child questions’), followed by the 20 occurrences frequency (of the code that describes the action ‘mother speaks to her child’). The following code in terms of occurrence frequency (14) refers to the child (‘the child speaks unclearly’), after which all codes with a frequency greater than 10 occurrences describe the actions of the mother (‘the mother shows her child a toy’; ‘the mother prompts the child’ or ‘the mother prompts the child to answer’) or simultaneous overlapping actions of mother and child (‘mother and child interact simultaneously’). What we notice here, unlike in the case of the secure interaction model, is a richer action of the mother, while the child fades into the background, being left with a very limited relational space to respond.

Below we present the list of codes with a frequency greater than 5 occurrences within the free play phase of the insecure ambivalent attachment.

Table 2. The list of codes with a frequency higher than 5 occurrences within the free play phase of the insecure ambivalent attachment

| |
|--|
| Code: M_f1_the mother asks the child questions {23-0} |
| Code: M_f1_the mother talks to/with the child {20-0} |
| Code: C_f1_the child speaks unclearly {14-0} |
| Code: MC_f1_the mother and the child interact simultaneously/talk {13-0} |
| Code: M_f1_the mother shows her child the toy {12-0} |
| Code: M_f1_the mother prompts her child {12-0} |
| Code: M_f1_the mother prompts her child’s answer by repeating it and congratulating her {11-0} |
| Code: C_f1_the child takes the toy, responds to her mother’s prompting {9-0} |
| Code: C_f1_the child looks at the toy {9-0} |
| Code: C_f1_the child takes a different toy {8-0} |
| Code: C_f1_the child answers to her mother {8-0} |
| Code: M_f1_the mother takes the toy {7-0} |
| Code: C_f1_the child looks at the stranger {6-0} |
| Code: C_f1_the child refuses to cooperate, turns her back to her mother {5-0} |
| Code: C_f1_the child talks to her mother {5-0} |

In order to describe the interaction patterns specific to the ambivalent attachment style of children, the 8 recordings were analyzed. The schema below (figure 2) shows the interaction model identified in the phase of free play involving the two protagonists.

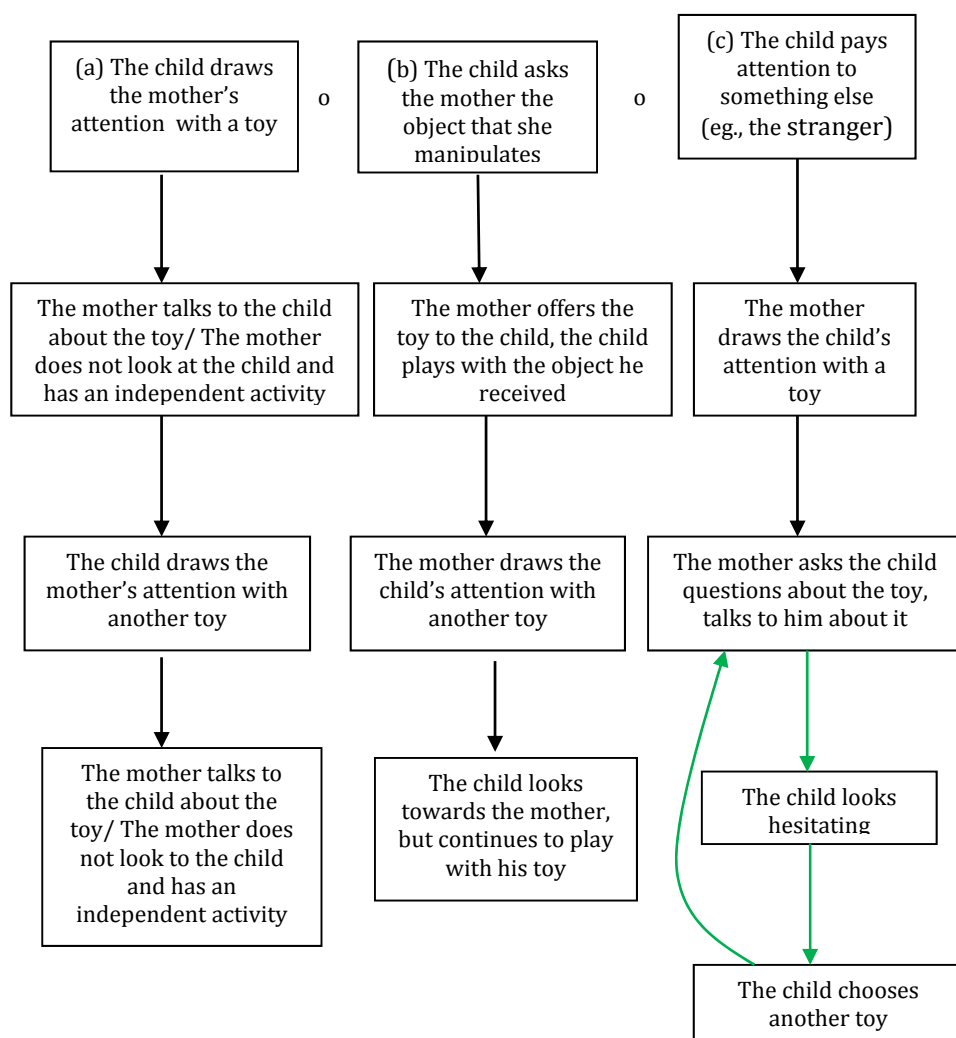


Figure 2. Mother-child interaction schema during the free play involving ambivalently attached children

The above figure shows that the child often initiates the activity either by (a) showing her mother the toy she discovered, or by (b) asking the mother to give her the object she handles. There is a third possibility (c): when the child is paying attention to something else – usually the stranger – the mother tries to get her attention (even if this interrupts an ongoing process between the child and the stranger, in this case the researcher). An important note regarding this situation is that the analysis of records in this study revealed the fact that the mother has a specific mimic, a high-pitched tone of voice (when calling her child), and a slightly intrusive behavior (sometimes she goes and pulls the child toward her by obvious physical gestures).

The continuation of the action is slightly different, depending on how it began (the cases described above). Thus, in case (a) where the child shows her mother a toy/ tries to draw her mother's attention with a toy, in most situations the next step is a double reaction of the mother: on a social level she repeats her child's words ('Yes dear, croak-croak!') or repeats the information given by the child without adding anything to communication, whereas at psychological/ non-verbal level she is involved in another activity (for example, she doesn't look at the child and continues her playing activity separately). In the next step, the child tries again to get her attention, showing her another toy. In most cases, the mother's response is the same, and the sequence is repeated, until the child gives up, sometimes tired of the mother's persistence.

In cases (b) when contact is initiated again by the child (this time by requesting the object the mother is already handling), the mother often responds by giving her the toy. Here one can already see the interaction structure specific to the ambivalent model-based relationship: although the child begins to play with the object she received, the mother shortly interrupts this activity by trying to draw her attention to another toy (basically she does not 'accompany' the child in her activity, like in the secure model case, but behaves as if she seeks, in her turn, attention from the child). Somehow 'demonstrating' that she adopted the model, the child develops behavior similar to that of her mother, as described at (a): (a) looks briefly to her mother (social level), but continues to play with the object already received (psychological level). Unlike the previous case (a), here the end of the interaction sequence (b) consists of the resumption of contact between the two protagonists: mother and child get to talk about the toy, yet the positive mimicry (expressing pleasure of interacting) is less present in comparison to the cases of secure attachment.

The situation type (c) in whose first stage the child pays attention to the foreign person or to another object, continues with the mother's action by which she aims to draw her child's attention with a toy (shows it to the child, speaks to her, asks her 'What is this?'; 'Look, a cow!'; 'How does the cow go?', etc.).

In the next stage, the child either looks at her all the time, or grabs the toy and begins to explore it. At this point, we can identify a new characteristic of the ambivalent interaction pattern: the child stops and chooses a new toy (thus interrupting the contact established with the mother). The sequence in which the mother reattempts to capture her child's attention can be repeated until, like in the situation type (a), the interaction 'subsides' by itself, or is interrupted by the researcher's intervention.

As a set of conclusions regarding the ambivalent model in the phase of free mother-child interaction, we can mention the following: *(1) the interaction sequences are short, there are many interruptions, hesitations, invitations, resuming of contact; (2) during the interaction there are brief moments when the child seems disconnected, disoriented, confused, hesitant, followed by the resumption of interaction with her mother; (3) often we noticed a mismatch between the social and psychological levels of communication; (4) ambivalent schemas may also alternate at the general level of interaction: sometimes the sequence is concluded by the contact between the two protagonists, with synchronized actions and the attainment of reciprocal attention; sometimes the attention seeking goes out by itself without reaching the point of sharing.*

Features of the interaction for the avoidant attachment style (A type)

As the sample under investigation comprised only 4 avoidant children, the degree of generalization of the schemas is low and may be used only as a rough guide. The elaboration of well-founded schemas specific to the avoidant mother-child interactions requires the study of an increased number of cases in subsequent investigations.

Besides, the low number of recordings limits our capacity to compare the amplitude of interactions between this style of attachment and those presented above.

During the free play phase, 26 significant behaviors were coded, out of which only five had a frequency higher than 5 occurrences. Unlike the insecure ambivalent attachment pattern, the avoidant one shows an increased balance between the relational space occupied by the actions of the two actors. The maximum frequency codes were 2 in number, referring both to the mother's action ('the mother prompts her child') and the child's response ('the child refuses to cooperate').

Table 3 shows the list of codes of frequencies greater than 5 occurrences in the free play phase of the avoidant insecure attachment.

Table 3. The list of codes with a frequency higher than 5 occurrences within the free play phase of the avoidant insecure attachment

Code: M_f1_the mother prompts the child {10-0}
 Code: C_f1_the child refuses to cooperate {10-0}
 Code: C_f1_the child talks to the mother {9-0}
 Code: M_f1_the mother asks her child questions {5-0}

The figure below (no. 3) shows the schema for the mother-child interaction in the free play phase.

In all the investigated cases, the free play sequence corresponding to the avoidant attachment style started with the mother's attempts to draw her child's attention by calling him and showing him a toy.

The defining element identified in the interaction based on avoidance is made obvious by the child's reaction: the contact maintained between the two, with a low degree of intimacy/closeness attained by focusing on an object external to the relationship, which can be the toy or the stranger. Thus sometimes the child responds by (a) approaching to take the toy from her mother, to which she apparently reacts in a playful manner (by games of the type 'I give it to you, I'm not giving it to you!'), but also by inducing a confusing note, bafflement and implicitly distance. The sequence ends with the child's physical moving away from the mother and going to the foreign person, as if the objective of receiving attention/confirmation from the attachment figure can only be reached by keeping away from her.

Circumscribed to the same operating principles as those mentioned above, an alternative response of the child to her mother's invitation is (b) the immediate focusing of her attention on the stranger. Further within the sequence, the mother speaks to the child, who carries on walking towards the stranger, the mother continues to call her, while she continues to ignore the calling, and thus keeps the mother's attention focused. As a confirmation that the model works, in the sense that it is the most effective strategy to achieve the goal of obtaining (indirectly) reciprocal attention, the mother goes to her child, interrupts the action, invites her to cooperate with her, and the child refuses her to the end.

The conclusion already mentioned with regard to the usual interaction of the avoidant model can be the following: *an effective strategy for the two protagonists to preserve relative contact and mutual attention is to move away from each other.*

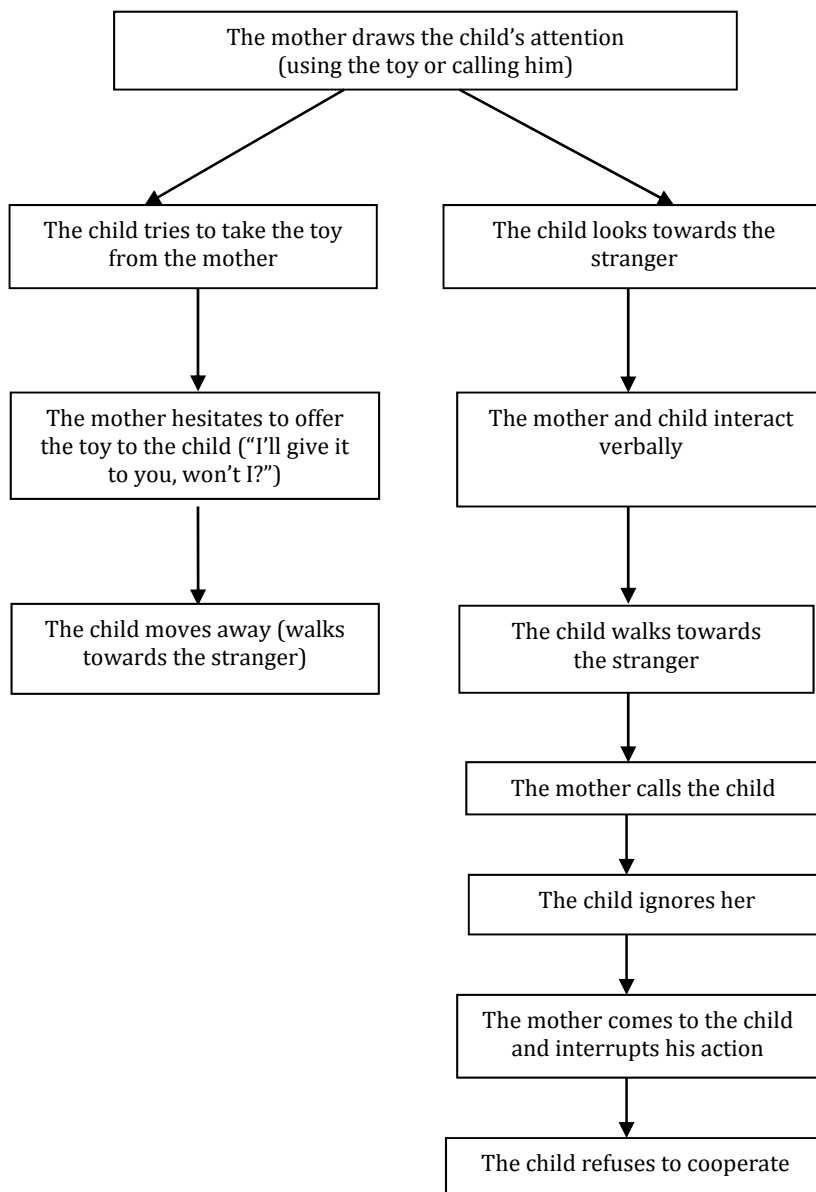


Figure 3. Mother-child interaction schema in the free play phase for the avoidant children

Features of the interaction for the disorganized attachment style (D type)

The analysis of the 4 records corresponding to the disorganized attachment style does not allow the development of a clear scheme of interaction. The lack of a coherent strategy is the basic characteristic of these children's interactions with their mothers during the free play situation, as already described in the literature (Ainsworth, 1978).

However, we will give some examples of interaction fragments to highlight some features of the interaction of children with disorganized attachment with their mothers, in the presence of a stranger.

For example, in one case, the free play interaction between the two protagonists begins in a way similar to that of the secure style, through good synchronization and relating. Nevertheless, the action continues in specifically avoidant, disconnected manner (the mother speaks with a stranger, while the little one plays, keeping the distance in order to receive any attention from her). But because the mother continues to speak and to be attentive to the stranger, the child does not receive the desired stimulation and attention, and changes abruptly her approaching strategy in a specifically ambivalent manner (cuddles in her mother's arms and hits her at the same time, thus discharging the accumulated frustration).

In a similar manner, other successive short passages follow in the interaction, that hold specific features for other styles of attachment, showing mixtures of various patterns previously described. The conclusion that can be drawn from these observations is that, like in the cases of other attachment categories, *these children seek the mother's attention, but her response is so inconsistent that they constantly struggle to change or briefly repeat all possible strategies of winning her over.*

Regarding the specific codes for the disorganized attachment, we see that, in the four films that we made, we identified a significant number of behaviors similar to those of the avoidant style. Next we present specific data only as a rough guide, given the small number of records, compared to the cases of secure and ambivalent styles, which does not allow for further inferences or generalizations.

More specifically, in the first phase of the semi-structured exercise, 30 behaviors were coded, out of which only 4 have a frequency greater than 5 occurrences (Table 4). The maximum of 8 occurrences is scored by the child behavior code, unlike in the case of the other styles of attachment and, moreover, is oriented towards the stranger, not the mother ('the child interacts, cooperates with the stranger').

Table 4. The list of codes with a frequency higher than 5 occurrences within the free play phase of the disorganized attachment

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|--|
| Code: C_f1_the child interacts and cooperates with the stranger {8-0} |
| Code: M_f1_the mother encourages her child {6-0} |
| Code: MC_f1_the mother and the child cooperate in for accomplishing the task {5-0} |
| Code: M_f1_the mother prompts her child {5-0} |

Discussions and conclusions

As it has been observed so far, this study has an obvious inductive structure. Due to the relatively small number of recordings, no conclusions with an overarching level of generality can be drawn. However, we can highlight some principles and implications thereof. We will briefly refer to a number of notable results found in the literature of the field surveyed.

In summary, we have shown that in the case of *secure attachment*, the most frequent codes refer to synchronized actions of a stimulus-response type, of the two protagonists involved, the mother and her child. Mutual trust within the interaction and enjoyment of the company represent intrinsic features of the relationship and attention, closeness and security seem to naturally derive from them. The mother seems to have a natural tendency to respond contingently to her child, is attuned to him, thus making the child feel the enjoyment of company and the eagerness to explore the environment.

Regarding the *insecure ambivalent* attachment style, we noted that, unlike the model of secure interaction, the mother's part in the interaction is more dominant and intrusive while the child's actions seem to fade and the relational space that he has is less extended. Belsky's already cited meta-analysis (1999) mentions the ambivalent insecure attachment's connection with the intrusive parenting style, which is excessively stimulating, and controls interactions. In this light, we added from our observations the unnatural way of relating, marked by micro-ruptures in the relationship (interruptions, hesitations) that are not corrected (the child seems disconnected, disoriented, confused, hesitant). The features of the interaction we observed match those described by Kirkland (2005, in Andreassen & Fletcher, 2007) for the ambivalent style: diminished in terms of sociability and independence, presenting an increased tendency to seek maternal attention, as well as distress at separation from her mother. Ambivalent schemas of interactions are also obvious in the discrepancies between the social and psychological levels of communication. Moreover, the ambivalent schemas alternate at the general level of the interaction: sometimes the sequence is concluded by the contact

between the two protagonists, with synchronized actions and the achievement of mutual attention; some other times it dies out by itself without achieving shared attention.

Regarding the *avoidant insecure* attachment style, unlike the case of ambivalent attachment, we observed an increased balance in the relational space between the actions of the two actors. In the free play phase the two protagonists maintain contact, but a low degree of intimacy and closeness is attained by focusing on an external object (the toy or the stranger) and does not rely on features within the relationship. In other words, an effective strategy for the two actors to preserve relative contact and mutual attention is to move away from each other. Ainsworth (1978) characterizes these children as exploring immediately, showing little affection or securing behavior, and answering minimally or showing very little distress when left alone. Moreover, they actively avoid the parent, looking elsewhere and often focusing on toys, while seeking distance, and being more interested in toys than in the parent.

Regarding the *disorganized attachment* style, the lack of a coherent strategy is the basic characteristic of these children's interaction with their mothers. These children alternate strategies specific to the secure, ambivalent and avoidant attachment styles, which is consistent with the observation of Main (2000, in Andreassen & Fletcher, 2007) who described these children as acting in a disoriented and confused manner in the presence of the parent, either by making attempts to please, or showing anger and rejection towards the parent. The conclusion that can be drawn from our observations is that, like the other types of attachment, these children seek their mothers' attention, but the latter's response is so inconsistent that the children try to either change or shortly repeat all possible strategies to establish a connection with her.

The present investigation analyzed detailed patterns of interaction between mother and toddler in a non-stressful situation (free play), in the natural environment of the dyad. Such an approach is useful for a practical reason: the schemas of interaction derived represent a basis to diagnose the model of interaction between parent and child in a non-intrusive manner. Furthermore, by having the secure model schema as an example of interaction, the parent can optimize his own relational patterns or may ask for professional support where they encounter difficulties in implementing a change. Moreover, for the professionals, the patterns we described can help in further operationalizing the specific behavioral patterns of interaction between mother and child in each of the insecure attachment styles and design interventions to change these patterns towards those specific to secure attachment. By analyzing both mother actions and child behaviors, our contribution to extant research in the field of attachment relationships is the enrichment of the description of attachment styles in terms of specific behaviors of the child, parallel to those of the mother.

Limitations of the study

Though the paper brings a novel and interesting methodological approach for the appraisal of attachment in mother-child dyads, several limitations are worth being mentioned. The main limitation resides in the method of classification of children's attachment styles by using the assessment of only one rater and not establishing interrater reliability. Also, the small number of video recording gathered for avoidant and disorganized attachment styles precludes us from generalizing the conclusions.

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