
BEYOND THE DEFICITS: JOINT ATTENTION AND INTERACTION IN YOUNG CHILDREN WITH AUTISM¹

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ABSTRACT. Autism Spectrum Disorder (ASD) is described as presenting persistent deficits in social communication and interaction, in addition to the limited, repetitive and stereotyped behavior pattern, interests and activities. Despite this dominant description – based on deficits - in the literature, there are also authors who cast glances over the behaviors beyond those deficits. From this perspective, the aim of this study was to investigate how the children with autism interact in the family context, more specifically, analyzing joint attention processes. Multiple-case studies were carried out with two five-year-old children diagnosed with ASD. For two months, weekly video recordings were made of these children in the family context. The scenes were mapped, transcribed and analyzed based on the framework of the Network of Meanings, and the interactions were considered through the notion of interactional flow. In spite of the presence of repetitive and stereotyped behavior and interests in both cases, there was the occurrence of communicative resources on the interactions, which often occurred in situations of social avoidance or opposition. In addition to these behaviors, there was the establishment of joint attention and negotiation processes of interest by the children. Evidence of such behaviors emphasizes the need for further exploration of the topic, since they point to some potentialities of these children, even through particular ways.

Keywords: Autism; social interaction; joint attention.

PARA ALÉM DOS DÉFICITS: INTERAÇÃO E ATENÇÃO CONJUNTA EM CRIANÇAS COM AUTISMO

RESUMO. As desordens do espectro autista são descritas por déficits persistentes na interação e comunicação social, além de padrão restrito, repetitivo e estereotipado de comportamentos, interesses e atividades. Apesar dessa descrição dominante – a partir dos déficits –, na literatura também há autores que lançam olhares aos comportamentos para além dos déficits. Nessa perspectiva, o objetivo deste trabalho foi investigar como se dão os processos de interação social em crianças com autismo em contexto familiar, mais especificamente analisando os processos de atenção conjunta. Estudos de casos múltiplos foram conduzidos com duas crianças de cinco anos diagnosticadas com o transtorno. Por dois meses, foram feitas videograções semanais das crianças no contexto familiar. Com base no referencial da Rede de Significações, as cenas foram mapeadas e transcritas, e as interações analisadas por meio da noção de fluxo interacional. Apesar da presença de comportamentos e interesses repetitivos e estereotipados nos dois casos, verificou-se a ocorrência de recursos comunicativos na interação, a qual se deu, muitas vezes, em situações de contraposição ou evitação social. Além desses comportamentos, verificou-se o estabelecimento de atenção conjunta e processos de negociação de interesses por parte das crianças. A evidência de tais comportamentos coloca como necessária maior

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exploração do tema, já que apontam para algumas potencialidades, mesmo que através de modos particulares nessas crianças.

Palavras-chave: Autismo; interação social; atenção conjunta.

MÁS ALLÁ DE LOS DÉFICITS: INTERACCIÓN Y ATENCIÓN CONJUNTA EN NIÑOS CON AUTISMO

RESUMEN. Los desórdenes del espectro autista son descritos como déficits persistentes en la interacción y comunicación social, más allá del estándar limitado, repetitivo y estereotipado de comportamientos, intereses y actividades. A pesar de esa descripción dominante – a partir de los déficits –, en la literatura también hay autores que han mirado los comportamientos más allá de los déficits. A partir de esta perspectiva, el objetivo de este trabajo es investigar cómo se dan procesos de interacción social en niños con autismo dentro de un contexto familiar, más específicamente a partir del análisis de procesos de atención conjunta. Se llevaron a cabo estudios de caso múltiple, con dos niños de cinco años diagnosticados con el trastorno. En un periodo de dos meses se hizo videograbaciones semanales de los niños en el contexto familiar. Con base en el marco de la red de significados, las escenas fueron mapeadas y transcritas, y las interacciones analizadas por medio de la noción de flujo de interacción. A pesar de la presencia de comportamientos e intereses repetitivos y estereotipados en ambos casos, se encontró que existe una producción de recursos comunicativos en la interacción los cuales se dieron, muchas veces, en situaciones de contraposición o evasión social. Además de estos comportamientos, se verificó el establecimiento de atención y procesos conjuntos de negociación de intereses por parte de los niños. La evidencia de tales comportamientos se hace necesaria una mayor exploración del tema, ya que ellas apuntan hacia algunas potencialidades incluso a través de las formas particulares de estos niños.

Palabras-clave: Autismo; interacción social; atención conjunta.

Since the first characterization of autism by Leo Kanner, in 1943, the field related to this thematic developed in a diverse and controversial way. Different backgrounds, ways of diagnosing and modes of intervention in the disorder were assigned. Thus, despite the extensive literature on the subject, autism understanding is still presented as a challenge (Baptista & Bosa, 2002).

Within the field, something that stands out is the description of autism mainly based on deficits. Contemporaneously, the main deficits identified as criteria for its diagnosis are: repetitive, restricted and stereotyped behaviors pattern, interests and / or activities; and losses in the interaction and communication (American Psychiatric Association [APA], 2013). Considering that much of the work has been devoted to the theme based on such deficits descriptions, it is important to understand either as they have been discussed or as they have been problematized, unfolding a different view regarding the use of deficits as the only guiding framework.

Restricted and repetitive behavior pattern and interests and/or activities

This set of symptoms has been less investigated than the others, being classified from two areas: repetitive motion and sensory behaviors pattern; and emphasis on monotony (Szatmari, et al., 2006). Within these, repetitive behaviors and motor mannerisms, preoccupation with parts of objects, inflexible adherence to routines and restricted pattern of interests would be considered as meaningful (Ray-Subramanian & Weismer, 2012).

A few studies attribute a negative correlation between intensity of these behaviors and the children's development (Szatmari, et al., 2006). In this sense, Ray-Subramanian and Weismer (2012) verified that children with these patterns have a greater risk of developing language problems; and, the authors noted improvements in language as predictive of the reduction of those behaviors.

Beyond those descriptions, other authors dealt with stereotypes and repetitive movements in different perspectives. Klinger (2010) refers to these behaviors as loaded with meanings, analyzing them within the interactional context. Kennedy, Kim, Knowles and Shukla (2000) seek for possible functions of the stereotype behaviors, describing them as appearing in moments of lack of stimulation

or as elusive to the interaction. Still, in the literature, there are understandings of these behaviors as characteristic of extreme situations that cause anxiety, the behavior meaning a way through which people with the disorder seek to calm themselves down (Joosten & Bundy, 2010; Ray-Subramian & Weismer, 2012).

In literature, other behaviors are also referred on a deficit perspective, particularly those related to social interaction.

Social interaction, communication and joint attention in autistic disorder

In this field, there are a number of impairment indicators such as non-fulfillment of eye contact and the discomfort to body contact; yet, problems with verbal and nonverbal language, besides the deficiency of joint attention (Lawton & Kasari, 2012). In this sense, Wetherby (2006) addresses the existence of symbolic failures, which are understood as related to disorders in the acquisition of gestures, words, imitation and symbolic game. The quality and quantity of the use of gestures are referred to as limited, and people with autism predominantly would use to communicate a primitive gestural contact. This contact would be characterized by leading people (they pull or handle the hand of another person) in order to achieve the desired object. Still, there could be absence of the conventional use of declarative gestures such as the showing and pointing ones.

It should be stressed that declarative gestures are seen as fundamental to the development of joint attention. As Tomasello (2003) proposes, this would be an ability to perceive the other and himself as intentional agents. Therefore, to Passerino and Santarosa (2007), joint attention would be an interaction in which the people - together and for a certain period - orient their attention to a third element, whether an object or a person. This ability is considered essential to the development of reciprocal social interactions, language and symbolic capacity; and its impairment is seen as an early indicator for the diagnosis of autism (Bosa, 2002).

In the case of autism, deficits in joint attention are considered related to the difficulties and damage on language development (Wong & Kasari, 2012). The losses would be mainly of the symbolic order; yet, their communicative acts would be mostly considered as non-interactive, one having difficulty in using the language in a functional way (Giardinetto, Deliberato, & Aiello, 2012).

Despite these impairments are widely recognized, Bosa (2002) states that there are evidences that confirm the engagement and response within social interactions by people presenting the disorder. For the author, people with autism show affiliated behaviors ability; besides, they vocalize toward partners and they present indicative behaviors of attachment. Such evidences would help to relativize conceptions that people with autism avoid, persistently, social interaction.

In the same perspective, Menezes and Perissinoto (2008) identified joint attention skills in children with autism, especially the child's response to adult action rather than the child's search for joint attention with the adult. However, the authors verified that, in many cases, both the child responds to the action of an adult and he/she can take the initiative of sharing attention with others. In the same direction, Wong and Kasari (2012) identified improvement in joint attention of children during interaction with the use of games, during interventions and teachers training.

In this respect, it is worth noting the work of Colus (2012) who - when analyzing joint attention regarding a baby with severe visual impairment -, stated that in addition to visual perception it should be considered other perceptual modalities that would enable the triadic interaction. Thus, the author proposes to seek the triangulation through other perceptive abilities as hearing and touch, raising the hypothesis of having several ways of establishment of joint attention process. These ideas and hypothesis for children with autism could be unfolded, since the ocular / visual contact is considered impaired.

Therefore, in this introduction, while analyzing the field literature, it was understood that one part (dominant) of the knowledge production of the issue has focused on deficits related to autism. The recognition of losses is important for the practical intervention. Nevertheless, as Silva (2010) states, depending on the emphasis given to these characteristics, such focus can contribute to crystallize conceptions related to autistic people as unable to establish social contact. Similarly, Camargo and Bosa (2009) argue that such views - which understand this child as unconnected - may restrict the

motivation in investing in the potentialities, limiting the ways of establishing relations, further damaging a better understanding of processes. Thus, Delfrate, Santana and Massi (2009) discuss the importance of building a look with a certain detachment from what is regarded as language deficits, understanding that people with autism are immersed in the world of language and in the social practices, in some way, sharing them.

Moreover, Campelo et al. (2009) besides Delfrate et al. (2009) argue that the non-verbal language and even the verbal language with stereotypes may prove to be communicative. Still, as Bagarollo, Ribeiro and Panhoca (2013) understand the play as socially constructed, they identified play possibilities in children with autism, stressing that these can happen due to some sort of symbolization capacity. And Lemos, Solomon and Agripino-Ramos (2014), in a study in schools, emphasized the importance of looking at the actions of these children without qualifying them only as losses, but trying to understand how these particular modes enable partners to have a more contact with these students.

From these last perspectives of children with autism and considering them beyond the deficits characteristics, the aim of this study was outlined to investigate whether occur social interaction in children with autism; and, if so, how do such processes occur within the family context. Among these processes, more specifically, it was attempted to verify the occurrence of joint attention among the children and their partners.

Method

For the study, a qualitative method was set up. The perspective of *Network of Meanings* (Rossetti-Ferreira, Amorim, Silva, & Carvalho, 2004) was the *theoretical-methodological* basis. This view is grounded on a historical-cultural approach, which proposes that human development occurs through co-constructional processes, in which the person is constituted within his/her relationship with each other and with the world. Through this perspective, the aim was to understand the behavior flows established in the dialogic processes established by children with autism in their "inter-action" with their families, through which it is understood that either adult or child constitute ways of signifying the world, the other and himself / herself.

With that in mind, it was decided that the empirical work would be conducted through multiple case studies (Yin, 2005). Particularly, with two children between three and six years old, who had been diagnosed with autism (APA, 2002). In order to develop this study, its project was firstly approved by the FFCLRP - USP Ethics Committee (n ° 511/2010); yet, parents responsible for the children signed the Informed Consent Form authorizing the participation of their children in the investigation.

Families with children who attended specialized institutions were invited. The research has been presented to three families, two of which consented with the participation of their children. These were considered the focal study participants. However, as the focus of the work lies in interactive processes, both their families and even the researcher were considered as participants in the study (Rossetti-Ferreira et al., 2004).

In the data collection period, both children were five years old, one male and the other female. In order to preserve their identities, it was established for them fictitious names: André and Paloma.

André was the only child who lived with his parents. In his early years of life, he had developed verbal language. However, during the child's first years, there was a speech regression and his parents sought for help. The child was diagnosed with autism at three.

Paloma was also an only child and received the autism diagnose few months before the start of the present data collection. She never had presented verbal language. Daughter of a divorced couple, Paloma lived with her mother, but regularly spent the afternoons at the home of her paternal grandmother.

In addition to attending regular school, twice a week, both children attended a specialized institution.

Data collection was done by video recordings by the researcher at the home of each family. Those video recordings took place once a week, over two months, every recording day lasting about sixty minutes. The focus of the video recordings was centered in the interactive processes established by

the child with the family, in the domestic context. The option of recording in the house of the families was due to some of the specificities of the disorder, as usually changes in the children routine can represent a stressor to them (Bosa, 2002). In addition, monitoring for a longer period at home was understood as possibly reducing the estrangement of the child regarding the researcher. Still, it was decided to video record at the child residence, as it was considered that, in familiar surroundings, it would be possible to apprehend features that do not normally appear in other contexts (Machado, 2000). Finally, the option of home video record was due to the verification of a shortage literary work making use of this record method. In fact, it was only found one work carried in this context (Carter et al., 2010). The other analyzed studies which made use of video, privileged clinical (as in Bagarollo et al., 2013), school (as in Lemos et al., 2014) or institutional (such as in Silva, 2010) environments.

Whereas the study aimed to investigate the social interactions and these involve body postures, looks and gestures, the use of video images was shown to be important as it enabled numerous returns to the recorded scenes, allowing a closer follow up and a refined apprehension of the processes (Carvalho et al., 1996). From the recordings, a mapping of the data was done. That consisted of registering events in the form of a transcription, organizing scenes and behaviors in different categories established according to the subject research. The guiding issue for that record (and subsequent choice of the episodes) was the concepts related to the interactional flow, proposed by Carvalho, Império-Hamburguer and Pedrosa (1996).

These authors understand the interaction as more than doing something together. They take into consideration the interaction as a reciprocal regulation, which can be implicit and not necessarily intentional between partners, seen as a potential adjustment between components of a system. From this perspective, social regulation analysis imply apprehension of one's movements or behaviors, in a given situation, depending on the other present components movements and behaviors (Carvalho et al., 1996). Like many other behavioral events, interactive event is considered as immersed in a continuous flow, which makes necessary to create criteria to make some sort of cuts in order to constitute episodes within it.

The focus of this work was seek to grasp the interactional flow and its co-regulations, within the dynamics of the relationships in the group, over time. So, in order to describe the interactions in these flows, it was necessary to specify what the participants do (together or not) and how they do (Carvalho, Branco, Pedrosa, & Gil, 2002). In this process, two elements were highlighted: the *orientation of attention* and the types of *regulation* that were established. The *orientation of attention* was identified from the target of the children's actions through their looks, speeches and/or movements. On the other hand, the *regulation* was apprehended through the content of the participants' behaviors and the effects of those actions over theirs partners (Carvalho et al., 2002).

From these two foci, orientation of attention and the types of regulation, four categories were established for the description of the processes. One was the *interaction* itself, when the orientation of attention is mutual and there is reciprocal regulation. A second category was *interactive movement*, when the orientation of attention is mutual and occurs reciprocal regulation, however narrowly, resulting in the reorientation of the child's attention towards other objects, partners or activities. A third category was the *peripheral participation*, when there is guidance on the child's attention toward the partner, but the behavior regulation is unilateral (one person regulate the behavior of the other, but is not regulated by the other). Finally, a forth category was the *individual activity*, when there is orientation of attention, but there is no behavior regulation (Carvalho, Branco, Pedrosa, & Gil, 2002).

To achieve the research aim - apprehending interactional processes and, specifically, joint attention -, some episodes were highlighted, among the various identified. Four of them will be presented below, which are described (in italics) and subsequently analyzed and discussed.

Results and Discussion

1st Episode - André: from stereotype to fun games

4th day of video recording; Duration: 5'45 "; **Participants:** André, his mother and researcher.

In most minutes of this episode, through different ways, André's mother seeks to contain her child's behavior, that is, to run in circles, while flapping his hands on his legs and head. In order to that, the mother calls him to play, questions him about objects, speaks about their family dog, and calls the child to go to the laundry with her. In some of these moments, André reacts, as after her mother mentioning the dog, he switches his gaze between the kennel and her mother, establishing for a few seconds eyes contact with his mother, while displaying facial expression of discontent. After some time of walking in circles and flapping his hands on his legs, he stops for a few seconds. Soon, he returns to do the same. Again, his mother directs at him and says, "Stop!" His mother has an angry facial expression and walks after the child, apparently to restrain him physically. In this movement, her expression softens and she says, "I'll get you." André - who had previously a neutral facial expression - starts to smile and to run away from his mother. She quickens her pace to reach him, wrapping him with her arms, saying "Gotcha!" They both smile. Then, he releases himself from her, returning to run, while smiling and looking back toward his mother. She goes toward him, reaches him and they get face to face. Then, he runs in the opposite direction to his mother, smiling broadly. He sits on the sofa, where the mother reaches him again and tickles him. He laughs and runs away from her. André runs. Then, smiling, he walks in the direction of the researcher (who is video recording) and surrounds her with his arms, staying behind her, laughing. The researcher and his mother also laugh. The mother touches her child, as if she tickles him and says, "I'll get you! Gotcha". The mother also says: "Did you call for help!? Have you made a friend?" The researcher laughs as André continues behind her, wrapping his arms around her. After leaving from behind the researcher, André restart to run from his mother and, again, he hides himself behind the researcher for three more times. During these moments, André smiles and cries out. The mother praises the child's action saying, "How cute you are " and "What nice !"

Overall, the central behavior of the episode is André's movement of walking and running in circles, flapping his hands in his legs and head, and wildly swinging his arms. This fact deserves attention, as it occurs in everyday video recording and corresponds to approximately 60% of all recorded minutes. In this analyzed day, the movement that his mother tries to contain happens in almost half of the recorded time. Thus, it is clear that this behavior is repetitive and stereotyped and it may be featured in the group of symptoms, which is the category of repetitive motor and sensory behavior (Szatmari et al., 2006).

The persistence of the behavior in the episode may be related to what the literature points in relation to language delays (Ray-Subramanian & Weismer, 2012) - as shown by the participant, who has almost total absence of verbal language. However, as discussed by Klinger (2010), when contextualized, this behavior can be analyzed seeking for the meanings present in the interaction. In this case, the occurrence of this behavior occurred after the mother offered something to the child - whether a food or a toy so they could play. Thus, one might think that the behavior has an elusive function to what was being proposed (Kennedy et al., 2000), even more as this behavior was accompanied by facial expression of discontent. Still, it can have the meaning related to something the child did not want to do, representing a discomfort or anxiety in front of the given situation (Ray-Weismer & Subramanian, 2012).

However, it is important to emphasize, from the episode, aspects related to interactional flow established between mother and child, flow that even originates from the child's repetitive behavior. From that flow, it is possible to see how the different activities among the partners eventually result in actual interaction. It is found that André's *individual activity* (walking and running, flapping his hands in his legs and head) regulates the mother's behavior. In many ways, she seeks that the child stops, trying to regulate his behavior. At times, she manages to establish with André interactive movements, in which he directs his attention to her (as when she mentions the dog). However, his behavior is not regulated by his mother reciprocally, since he persists with the stereotyped behavior.

At other times, such as when the mother seeks for her child's attention - and André remains running - he only plays one *peripheral participation*, and she cannot control his behavior. Thus, there are alternate approximation and distancing movements between the two. There are approaches that lead to *interactive movements* and the *interaction* itself; and there are partner spacings with *peripheral participation*. Nevertheless, when the interaction through *catch-up* game happens between mother and child - and later of the two involving the researcher - it can be seen that participants have the behaviors reciprocally regulated.

In the flow, there are changes in the facial expression of the participants, with the emergence of tender talks from the mother to her child, as well as exchange of glances between the two, including

therein from André toward his mother. In the play activity, from the direct physical contact (hugging, tickling) permeated by affection, the reciprocal regulation of the partners happens. The exchange of glances among mother, child and researcher represents an aspect that worth mentioning, since eye contact has been considered both unconventional in people with autism and also one of the main deficit components that take place in their social interaction. The same can be said in relation to physical contact and facial expressions understood as little present (APA, 2002), but abundant in the observed scene.

In this episode, there is still evidence of joint attention from André, although this is also considered a skill deficit in people with the disorder (Passerino & Santarosa, 2007). Joint attention was expressed in response to his mother's action (when he directs his gaze to elements that the mother indicates, as the dog). Nevertheless, this manifestation was observed not through the child's initiative to seek for attracting his mother's gaze and attention to a third object, as is mainly discussed in the literature of joint attention in autism (Menezes & Perissinoto, 2008).

2nd Episode- Paloma: I want to watch this cartoon

5th day of video recording; Duration: 3'30 "; Participants: Paloma and her mother.

The episode begins with Paloma lying on the sofa, watching television. Shortly after, she gets up and walks toward her mother, who is cleaning the garage. The child stops in front of her mother, with her eyes on her mother's face. Then, Paloma starts babbling and gesturing toward her. Her mother stops cleaning the floor, puts the squeegee down, looks directly to her daughter's face and asks, "What's happening? What do you want? Talk to Mom." After a few babbling, without any understanding by her mother, Paloma begins to try to catch her mother's hand. Her mother tries to avoid her daughter's physical contact and seeks, again - through verbal language - to get from Paloma an explanation about what she wants, picking up Paloma's face and turning it directly to her face. Paloma deviates from this gesture and tries, again, to catch her mother's hand. Her mother stops avoiding her daughter and gives her hand to her, who leads her to the living room. Paloma picks up the television remote control and puts it on her mother's hands. The mother manipulates the remote control, takes off the cartoon the child was watching and puts the cartoon menu on the screen. The child is looking toward the TV, while the mother passes the menu screens. Paloma goes close to the television monitor and indicates with her finger the cartoon she wants to watch. The mother stops the menu and turns on the cartoon her child indicated. When it starts, her mother says, "This one you do not like ... I will stay here." Addressing the researcher, the mother says that she certainly will soon have to look for another cartoon. The child is close to the TV and when the title of the episode appears, she walks toward the sofa, approaching her mother. Her mother tells her, "This is boring ... you do not like it!" Then, the mother manipulates the remote control again, stopping the cartoon that is playing and going back to the menu screen. Paloma approaches the TV once again. Twice, the child puts her hand on the side of the screen (once on the right and once on the left side, without touching the icons of the cartoons), indicating to her mother that she wants that the menu slides sideways. Finally, Paloma puts her hand on one of the icons. Her mother asks, "Is that one?!" Her mother puts the cartoon indicated by the daughter. After, her mother leaves the room while Paloma lies on the sofa to watch the chosen cartoon.

With regard to the interactional flow, it can be seen as Paloma goes from an *individual activity* (lying on the sofa by herself, watching television) which is replaced by successive *interactive movements* with her mother (babbling and taking her mother by the hand) in which both have orientation of mutual attention. Nevertheless, the behavior regulation happens narrowly (as when her mother avoids her physical contact, seeking for her verbal language expression). This process of approximation between the two culminates in moments in which both have regulation and reciprocal attention (such as when they regulate the behavior, in the search for the chosen cartoon), characterizing an *interaction* itself between the partners.

It is worth highlighting the active role of Paloma in this episode, when she seeks for the interaction with the mother. To place a demand, the child moves to where the mother is, seeks to communicate through the look, in addition to babbling, and gestures. However, she is not understood by the mother. As discussed in the literature related to children with autism, there are losses in the oral language, with

its use in an unconventional way and with difficulties in pragmatic aspects and narratives structuring, leading to limitations in the construction of utterances (Campelo et al., 2009). But, by failing to communicate what she really wants, Paloma continues searching to do so by using other way, that is, taking her mother's hand in order to take her close to the television set. Therefore, unable to communicate when using verbal language, the child makes use of body movements and gestures, as to pull her mother's hand.

These behaviors are discussed in the literature as primitive gestures, pointing out its existence as a loss in the symbolic capacity of the child, whose behavior is regarded as important in the diagnosis of autistic disorder (Wetherby, 2006). In the analysis here, however, these Paloma's behaviors are understood as a sought to re-actualize an interaction and communication, by the use of different means. Thus, it is evident the importance of the language features that are beyond the verbal, in order to understand how the child expresses herself (Delfrate et al., 2009). When seeking for and using these alternative means, Paloma has shown to be immersed not only in the language universe, as well as sharing forms of communication.

Additionally, the episode shows the presentation of joint attention behaviors by Paloma, despite what the literature indicates that as one of the major weaknesses of children with autism (Passerino & Santarosa, 2007). Moreover, Paloma is active in the process of sharing attention, as discussed by Menezes and Perissinoto (2008), despite these authors also claim that this is an uncommon way of occurrence of this process. In the analyzed case, to be able to attract her mother's attention and deliver the remote control to her, this child is seen as responsible for initiating the establishment of joint attention. Furthermore, through the gesture of pointing to what she wants, she establishes, among the menu options, which cartoon she wants to watch. Again, this gesture of pointing is usually seen as being deficient in children with autistic disorder (Wetherby, 2006). Here, its use is understood as making itself in a broad and explicit way, allowing the child's communication and leading her to reach her goal.

In addition to the establishment of joint attention ability, it is important to be addressed a major focus of Paloma's interest and that permeates all video recordings: the repeated interest in the same cartoon character (Woody Woodpecker), such interest was present in 28% of the video recorded minutes. At this analyzed day, she saw the cartoon during 49% of the time. This feature can again emphasize the symptomatic character as insistence on monotony (Szatmari et al., 2006). But, if we look beyond this description, one can see how this interest appears in a figure-background game in many of Paloma's interactive processes. This interest in Woody Woodpecker cartoon is often what motivates the search for interaction (like going to her mother), being figure in this moments and being the motor of some of the child's relationships.

3rd Episode- André: In the bottle or in the glass?

6°Day video recording; Duration: 3 '13'; **Participants:** André and his mother.

The mother holds a toy, trying to play with the child. André looks towards his mother, turns away from her and goes to the kitchen. His mother follows him, still with the object in her hand, touching him on his head. With a nuisance facial expression, with a wave of his hand, the boy tries to take away the object from his head. In the kitchen, André walks toward the closet and grabs a squeeze. Seeing him with the object, his mother says, "This bottle is without its top." Then she makes a number of attempts for the child to accept a glass, instead of the bottle. She seeks for a glass on the sink and says, "Let me put juice in the glass." At this time, André is with a neutral facial expression and holds the bottle, alternating his gaze between the mother and the bottle in his own hand. His mother asks if he wants juice and comes near her child. She puts the glass on the table and try to remove the bottle from him. André holds firmly the bottle and moves away from his mother. She also moves away, going to get the juice and taking it to the table. She holds the juice box and the glass. Addressing the child, she raises the glass and says, "Do I put it here?" Then, André stretches out his arm with the bottle toward his mother. She indicates the bottle, with her finger leaning against it, saying, "Here?!". He approaches even more the bottle and he leans it against the juice box. His mother says she wants to see if he will be able to drink the juice in that container. She puts the juice

in the bottle that is in the child's hand. He takes the bottle to his mouth. His mother is standing in front of him, looking at him while she has her hands on her hips. André cannot drink and lowers the bottle on the table with a disappointment facial expression. His mother asks him if she can put the juice into the glass. He does not oppose and his mother puts the juice into the glass. André drinks juice in the glass.

Regarding the interactional flow, initially, mother and child have a *peripheral participation* with the direction of reciprocal attention, only the mother's behavior being regulated by André (when the mother seeks interaction through the toy and André refuses, turning away from her and going to the kitchen). In the course of the episode, the actions lead to an *interactive motion* with a reciprocal regulation, but restricted (when André walks toward the closet, redirecting his attention). After André takes the bottle in the cupboard, different *interactive movements* happen - through alternating glances among the mother, the child and the object, in addition to André's elusive movement (when the mother tries to take the bottle) - culminating in *interaction* (where mother and child negotiate the container where the juice is going to be placed).

From the perspective of the interactional flow (Carvalho et al., 2002), it is noticeable as the child and his mother actively negotiate the use of the container to drink the juice: bottle or glass? On the one hand, the child posits himself in opposition to his mother, trying to support his will of drinking the juice in the bottle; on the other hand, the mother tries to convince him that this will not work. The child and the mother negotiate and mutually regulate the behaviors of each other through gestures and body movements. In that sense, it is observed that André directs his gaze to his mother's actions; prevents the removal of the bottle from his hand; takes the bottle toward his mother so that the juice can be placed there. Enduring in this position, André regulates his mother's behavior, insisting that she puts the juice in the bottle. Later, he gives up, allowing his mother to put juice into the glass, as she had indicated earlier. Thus, it is possible to perceive the social positions established in the relationship of one partner over the other, each one placing its own perspective and negotiating, where both either defend intentions, or give it up (Rossetti- Ferreira et al., 2004).

Although André remained with neutral facial expression in different times, he followed his mother with a look and expressed himself through gestures, showing his intentions. Through gestures - as to stretch the bottle toward the juice box or, later, by accepting to put the liquid in the glass - André demonstrated to share attention with her mother in relation to objects, establishing a triadic relationship. Although he does not use the gesture of pointing and not look to his own mother in relation to the objects in question, as discussed by Tomasello (2003), André used other means to share with her mother the object in which he wished to drink juice - the bottle and not the glass. As discussed in Colus' work (2012), it is necessary to seek other options beyond the visual perception, to apprehend the establishment of joint attention.

4th Episode- Paloma: the sink is the place of dirty glass

3rd day of video recording; Duration: 1'29"; Participants: Paloma, her father, her grandmother and her great-aunt.

In this episode, Paloma has turned her interest to the Woody Woodpecker cartoon, which her father had made available in the cell phone. With this interest, at the same time, she performs simultaneously other activities without losing focus of attention in the cell images. Thus, Paloma comes into the kitchen and opens the refrigerator, with her attention still directed to the cartoon in the cell phone. In this posture, she picks up a bottle of soda in the fridge and walks going out from the kitchen toward the backyard. Her father is in the way and takes the bottle out of her hand, saying that she is supposed to have just a glass. She grumbles and whimpers slightly. Then, she follows her father back to the kitchen, standing at his side, as he puts the soda into a glass. While she waits for the glass of soda, she remains looking in the direction of the cell phone. Then, she takes the glass that her father gives her and walks toward the backyard. There, she stops and drinks her soda, while she still keeps her gaze fixed on the cell phone. When she finishes drinking the soda, she throws the glass on the gravel. Her father, who is behind her, says, "Don't do this!" Paloma stays looking at the phone. Her father touches her on her back, indicates the glass pointing at it and says, "Get it". Paloma, which does not

deflect her yes from the phone, reaches out and grabs the glass. Her father slopes on her shoulders and says, "Put it there, in the sink." She goes and takes the glass to the sink, always with her gaze focused on the mobile phone.

The interactional flow of the episode begins with Paloma's *individual activity* (get the soda in the fridge, while watching the cartoon). When she meets with her father, both establish an *interactive movement* (when he removed the bottle from her hand), having orientation of reciprocal attention and behavior regulation, even so restricted by Paloma's attention (watching the cartoon in the cell phone). The child regain again an *individual activity* (when she goes with the glass toward the backyard). However, she establishes with her father a *peripheral participation*, when he has his behavior regulated by her (going after his daughter). The *interaction* happens when both regulate the behaviors of each other reciprocally (she takes the glass after his father's request and takes it to the sink).

A recurring behavior in this episode was related to Paloma, who stays with her gaze fixed on the cell phone, watching the Woody Woodpecker cartoon. As outlined in the 2nd episode presented in this paper, this behavior seems to characterize repeated insistence on monotony, which may be related to communication developmental delays (Szatmari et al., 2006). This repetitive behavior occurred in 50% of videorecorded minutes on this day, which can reinforce its symptomatic character. But in the highlighted moments in this episode, although Paloma has a centrally attention directed to the cartoon, she makes a number of other activities such as picking up the bottle of soda, drinking soda and answering to her father's call. Thus, despite the permanence of this behavior, this does not seem to hinder the understanding of the situation for the child and her interaction with her father.

At the time of *interaction*, Paloma showed even her ability to share attention to an object, in this case the glass. She showed understanding regarding what his father wanted and answered appropriately, demonstrating joint attention that appears in response to adult's action, as discussed by Menezes and Peressinato (2008). It is important to emphasize that throughout this episode, Paloma shares the object of attention with his father, despite not keeping any eye contact nor with the object and nor with the father, using primarily auditory and tactile clues (Colus, 2012).

Final considerations

This study aimed to apprehend behaviors of children with autism without a framework focused on deficits, in accordance with Silva (2010). The aim was to analyze the interactive processes in a context, in naturalistic environment, in order to investigate how they develop in their relationships. It is worth stressing that it was not our intention to make a lightly discussion, denying the particularities in the areas of interaction and communication of children with the disorder. However, we sought to apprehend if the interaction and joint attention processes could manifest in a particular way in these children. In addition, if verifying its occurrence, we sought to understand how those processes take place and if there is possibility of giving other meanings to these behaviors.

With the study, stereotypies and repetitive behaviors were observed. In the case of André, in about 60% of video-recorded time, he walks in circles, waving his arms. In the case of Paloma, there is a central interest in the Woody Woodpecker cartoon, which is present in 28% of the recordings. In the case of André, that behavior appeared to express an elusive function or discomfort, as discussed by Kennedy et al (2000). In the case of Paloma, her repetitive interest was what motivated the search for interaction and took the child to seek to communicate through the look, babbling, gesticulations, taking her mother's hand, handing the remote control to her, in addition the use of gesture of pointing, in order to achieve her goal.

This use of communicative means was also present in the case of André, either in the episode in which he exchanges glances with his mother during the *catch-up game*, or in the episode of "In the bottle or in the glass?" The child demonstrated his intention to drink juice in the bottle by holding it tight, preventing the bottle to be removed from his hand; also, when the boy took the bottle toward his mother in order to put the juice into the bottle; and, finally, when there was no reaction to his mother offer, after verifying he was not able to drink the juice directly from the bottle. It was also observed the pleasure he expressed with the physical contact, in the

catch-up playful activity, with the presence of broad smiles, personal touches and hugs. Through the analysis, it was identified and it was here given visibility to the dynamism of the interactional flow involving the two children in their relationships with family members, in the domestic context, in which partners were mutually regulated.

The episodes also showed that, through glances, gestures and body postures mentioned above, children have shown to share the attention with respect to a third object, establishing a triadic relationship. This relationship was even evident despite the child did not keep an eye contact with neither the object nor with the adult, using primarily auditory and tactile clues, as in the case of Paloma's glass of soda. The establishment of joint attention occurred as a response either to the adult's action or to an active action of the child promoting adult attention in relation to an object.

Despite these contributions, it is understood that this study has limitations, since it led case studies with two children only. As the disorder is a spectrum, it is necessary to have researches conducted with a larger number of children with different degrees of severities, to move toward a greater understanding of the scope of the present results (Baptista & Bosa, 2002).

In spite of its limitations, it is also understood that the study provides elements that can contribute with conceptual elements, and can help family members, educators and health professionals in relation to the way these children with disorder are and how they can relate themselves with others. It is believed that through observations of the interactive processes of these children, an understanding can be achieved related to how these actions are developed in a situated and relational way, what can strengthen the contribution to some particular ways by which these children come into relation with others and posit themselves in their relationships.

References

- American Psychiatric Association [APA] (2002). *Manual diagnóstico e estatístico de transtornos mentais*. Porto Alegre (RS): Artmed.
- American Psychiatric Association [APA] (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Association.
- Bagarollo, M. F., Ribeiro, V. V., & Panhoca, I. (2013). O brincar de uma criança autista sob a ótica da perspectiva histórico-cultural. *Revista Brasileira de Educação Especial*, 19(1), 107-120.
- Baptista, C. R. & Bosa, C. (2002). *Autismo e educação: Reflexões e propostas de intervenção*. Porto Alegre: Artmed.
- Bosa, C. (2002). Atenção compartilhada e identificação precoce do autismo. *Psicologia: Reflexão e Crítica*, 15(1), 77-88.
- Camargo, S. P. H. & Bosa, C. (2009). Competência social, inclusão escolar e autismo: Revisão crítica da literatura. *Psicologia & Sociedade*, 21(1), 65-74.
- Campelo, L. D., Lucena, J. A., Lima, C. N., Araújo, H. M. M., Viana, L. G. O., Veloso, M. M. L. & Correia, P. I. F. B. (2009). Autismo: Um estudo de habilidades comunicativas em crianças. *Revista CEFAC*, 11(4), 598-606.
- Carter, P., Downs, J., Bebbington, A., Williams, S., Jacoby, P., Kaufmann, W. E. & Leonard, H. (2010). Stereotypical hand movements in 144 subjects with Rett syndrome from the population-based Australian database. *Movement Disorders*, 25(3), 282-288.
- Carvalho, A. M. A., Bergamasco, N. H. P., Lyra, M. C. D. P., Pedrosa, M. I. P. C., Rubiano, M. R. B., Rossetti-Ferreira, M. C., Vasconcellos, V. M. R. (1996). Registro em vídeo na pesquisa em psicologia: Reflexões a partir de relatos de experiência. *Psicologia: Teoria e Pesquisa*, 12(3), 261-267.
- Carvalho, A. M. A., Branco, A. U. A., Pedrosa, M. I., & Gil, M. S. C. A. (2002). Dinâmica interacional de crianças em grupo: Um ensaio de categorização. *Psicologia em Estudo*, 7(2), 91-99.
- Carvalho, A. M. A., Império-Hamburger, A. & Pedrosa, M. I. (1996). *Interação, regulação e correlação no contexto de desenvolvimento humano: Discussão conceitual e exemplos empíricos* (Vol. 1196, pp. 1-34). São Paulo, SP: Publicações IFUSP.
- Colus, K. M. (2012). *Processos de estabelecimento da atenção conjunta em um bebê vidente e em outro com deficiência visual severa*. Dissertação de mestrado não publicada. Programa de Pós-graduação em Psicologia, Ribeirão Preto, Universidade de São Paulo.
- Delfrate, C. B., Santana, A. P. O., & Massi, G. A. (2009). A aquisição de linguagem na criança com autismo: Um estudo de caso. *Psicologia em Estudo*, 14(2), 321-331.
- Giardinetto, A. R. S. B., Deliberato, D., & Aiello, A. L. R. (2012). Sistema de comunicação alternativa na interação de um aluno com autismo e seu professor. *Revista Teias*, 13(30), 227-245.
- Joosten, A. V. & Bundy, A. C. (2010). Sensory processing and stereotypical and repetitive behaviour in children with autism and intellectual disability. *Australian Occupational Therapy Journal*, 57(6), 366-372.

- Kennedy, C. H., Kim, A. M., Knowles, T. & Shukla, S. (2000). Analyzing the multiple functions of stereotypical behavior for students with autism: implications for assessment and treatment. *Journal of Applied Behavior Analysis*, 33(4), 559-571.
- Klinger, H. (2010). *O brincar e as estereotipias em crianças do espectro autista diante da terapia fonoaudiológica de concepção interacionista*. Dissertação de mestrado não publicada. Universidade Federal de Santa Maria, Santa Maria, RS.
- Lawton, K. & Kasari, C. (2012). Brief report: Longitudinal improvements in the quality of joint attention in preschool children with autism. *Journal of Autism and Developmental Disorders*, 42(2), 307-312.
- Lemos, E. L. M., Salomão, N. M. R., & Agripino-Ramos, C. S. (2014). Inclusão de crianças autistas: Um estudo sobre interações sociais no contexto escolar. *Revista Brasileira de Educação Especial*, 20(1), 117-130.
- Machado, M. L. C. A. (2000). *Autismo infantil: Uma abordagem fonoaudiológica dirigida à família*. Trabalho de conclusão de especialização não publicado. Centro de Especialização em Fonoaudiologia Clínica-Linguagem, Rio de Janeiro, RJ.
- Menezes, C. G. & Perissinoto, J. (2008). Habilidades de atenção compartilhada em sujeitos com transtornos do espectro autístico. *Pró-Fono*, 20(4), 273-278.
- Passerino, L. M., & Santarosa, L. C. M. (2007). Interação social no autismo em ambientes digitais de aprendizagem. *Psicologia: Reflexão e Crítica*, 20(1), 54-64.
- Ray-Subramanian, C. E. & Weismer, S. E. (2012). Receptive and expressive language as predictors of restricted and repetitive behaviors in young children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 42(10), 2113-2120.
- Rossetti-Ferreira, M. C., Amorim, K. S., Silva, A. P. S., & Carvalho, A. M. A. (2004). *Rede de significação e o estudo do desenvolvimento humano*. São Paulo, SP: Artmed.
- Silva, E. C. C. (2010). *Autismo e troca social: Contribuições de uma abordagem microgenética* (Tese de doutorado não publicada). Universidade Federal de Pernambuco, Recife, PE.
- Szatmari, P., Georgiades, S., Bryson, S., Zwaigenbaum, L., Roberts, W., Mahoney, W., & Tuffi, L. (2006). Investigating the structure of the restricted, repetitive behaviours and interests domain of autism. *Journal of Child Psychology and Psychiatry*, 47(6), 582-590.
- Tomasello, M. (2003). Atenção conjunta e aprendizagem cultural. In *Origens culturais da aquisição do conhecimento humano* (pp. 77-129). São Paulo, SP: Martins Fontes.
- Wetherby, A. M. (2006). Understanding and measuring social communication in children with autism spectrum disorders. In T. Charman & W. Stone (Eds.), *Social and communication developmental in autism spectrum disorders early identification, diagnosis & interventions* (pp. 3-34). New York, NY: Guilford.
- Wong, C. & Kasari, C. (2012). Play and joint attention of children with autism in the preschool special education classroom. *Journal of Autism and Developmental Disorders*, 42(10), 2152-2161.
- Yin, R. K. (2005). *Estudo de caso: Planejamento e métodos* (3a ed.). Porto Alegre, RS: Bookman.

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