

ORIGINAL ARTICLE

Infants' peer interaction in institutional foster care service

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Abstract

Introduction: Based on the perspective of children's intersubjectivity, it is understood that infants are able to interact with infants from a very early age. These interactions can offer important constitutive experiences for them.

Objective: It was investigated how interactions between infants-toddlers in institutional foster care occur, describing: the frequency of these interactions; the emotional-communicative resources involved; partners' responsiveness; and the environmental organization.

Methods: A qualitative, descriptive, and exploratory case study was conducted. Participants were focal baby (aged between 10 and 13 months) and their interactive peers (4 to 17 months) in institutional care. We used weekly video recordings for three months in the naturalistic context. The categories "attention orientation", "search/maintenance of proximity", "social exchanges", and "responsiveness" were quantified and compared with the interaction between infant and caregiver. Interactive episodes were also thoroughly described.

Results: Cribs, strollers, gates, and grids, with few toys available, marked the organization of the physical-social space. It was observed that the infants spent most of their time in individual activities (alone); and their social behaviors were more often directed to caregivers.

The interactions between infants/toddlers were less frequent, although it was with the peers that social exchanges, joint activities, and co-regulated interactions occurred the most (with reciprocity and sharing). Peer responsiveness also involved empathic and pro-social behaviors (with experiences of interpersonal engagement), where attentional, emotional, and motivational processes operated.

Conclusion: Peers interactions between infants/toddlers in institutional care were infrequent. However, when it occurred, the children showed sensitivity and responsiveness to their peers' emotional-communicative expressions. The organization of the institutional environment proved to be a relevant constraint of peer interactions: due to the material/spatial arrangement that made contact between children difficult; and by the absence of the adult as a promoter of these interactions. Finally, we call attention to the need for further investigations about interactive indicators of infants in institutional care.

Keywords: infants, child foster, social interaction, peer interaction.

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Authors summary

Why was this study done?

Shifting the focus so centered on the adult-child relationship, studies have shown that important psychological functions are developed in infants/toddlers interactions. Considering that the adult-child ratio is low in foster care institutions and children are usually the most available partners for interactions, it was shown to be relevant to articulate this knowledge in the field of child development with empirical data located.

What did the researchers do and find?

A case study was conducted, descriptive-exploratory, with a qualitative approach, following through video recordings the interactions between infants in institutional foster care service. The results indicated that the infants spent most of the time alone in cribs and strollers, with low proximity and physical contact with their peers. Even so, children proved to be more responsive interactive partners than adults and, among them, there was a greater occurrence of reciprocally oriented social behaviors. Sensitivity to mutual signals, synchrony and coordinated cooperative actions were also observed.

What do these findings mean?

In the context of collective care, where individualized care is often hampered by the caregiver-child ratio, interactions between infants enable them to realize that their actions have an impact on the other (even if not an adult); another that attends, responds and comforts, contributing to their physical, cognitive, social and affective development. It is expected that crucial aspects and characteristics of these processes can be intentionally pursued, discussed and planned, considering the importance of the adult caregiver as a promoter, mediator and cultural agent in the meetings between peers.

INTRODUCTION

As Amorim *et al.*¹ point out, empirical studies have shown that infants interact with infants from an early age. Despite motor incompleteness, infants' broad repertoire of emotional, visual, auditory, olfactory, gestural and postural skills allow them to be active participants in interactions with their contemporaries², demonstrating differential patterns of communicative and expressive resources³, and specificities in the development of social engagement⁴.

However, according to Bradley and Smithson, in the context of Developmental Psychology, the sociability of infants has been more commonly studied in terms of dyadic abilities and behaviors, and especially in the interaction with adults (mother-infant). Traditionally, infants have been treated as subjects of private and reproductive life^{1,3}, although recent studies have shown evidence of their ability to interact with peers and in group situations, with more than two partners simultaneously, opening up a series of empirical questions, theoretical and practical⁵. Along these lines, interactions in groups of children have made it possible to discuss the creation of shared meanings and the process of constitution of important psychological functions⁶. The Pedrosa and Carvalho⁶ show, infants are interested in the actions and objects of other children, extracting meanings from these activities. Even before children use verbal language, the experiences they experience during their (inter) actions and games with peers enable the development of skills related to the attribution of meanings, the construction of new meanings and the (trans) formation of the same^{3,7}.

Thus, objects, toys and even peer actions are attractive, making it possible, for example, to establish infant-infant-object interactions, which are considered fundamental for the development of joint attention⁸ or coordinated joint engagement⁴. Such processes refer to the child's ability to coordinate his attention/action towards an object or event together with another individual and enable the recognition of the other's communicative intentions, being a milestone in the development of referential communicative skills^{4,9}. Involving intermodal sensorimotor processes, with synchronization and coordination of actions, they also promote advances in the child's abilities to imitate his social partners and through imitation his behavioral and communicative repertoires expand¹⁰.

Therefore, shifting the focus so centered from the adult-child dyadic relationship, it appears that toddlers are partners with other children in interactions that provide different learning opportunities and negotiation of positions and roles^{3,6}. The interactions of infants pairs provide several evidences of their abilities, allowing to identify potentialities and (re) know forms of sociability¹¹, in addition to providing support for the construction of differential practices in collective care/education contexts¹. These processes have been more commonly investigated from the context of Early Childhood Education^{6,8}. However, the following questions arise: how do the interactions of infants peers and infants with young children take place in foster care institutions (special protection program, in the form of long-term foster care, for children and adolescents at high risk and social vulnerability), where the adult-child ratio is low and peers are usually the most available interactive partners? What would be the particularities of these interactions in these contexts?

These issues are relevant to the extent that, for various reasons involving serious threats to their rights, vulnerabilities, abandonment, neglect and violence, foster careed infants are referred to FOSTER CARE INSTITUTIONS" where they spend several months of life, and many, even years. In addition to being removed from the family environment, these infants usually do not attend daycare centers either, under the prerogative that the welcoming institution already plays the same role^{12,13}. Therefore, the institutional care environment is usually the main or only field where these children's interactive possibilities open up.

Based on these considerations, the objective of the present study was to analyze infant-infant / toddler's interactions in an institutional care program.

METHODS

As a methodological design, it was decided to conduct an observational study, of a descriptive and exploratory nature, in a natural environment and with a convenience sample. As highlighted by Zangirolami-Raimundo *et al.*¹⁴, studies like this one – based on systematic and standardized observations, with collection

and recording of information that occur spontaneously in a naturalistic context – allow establishing relationships and associations between phenomena (in the specific case, focusing on interactions and, above all, allow to reach new hypotheses that guide the construction and conduction of future research projects.

Participants

This research was carried out in a foster care institution for children from zero to six years old, in a municipality in the state of São Paulo. It was a non-governmental entity (NGE) with the capacity to accommodate up to 20 children and which had the following team: a director; a technical team (formed by a coordinator, a social worker and a psychologist); general employees (cook, driver and general services); and, three pairs of caregivers / educators who worked on a rotation basis. The presence of volunteers, visitors and relatives of children welcomed was also an integral part of institutional daily life.

During the three months of data collection, there was a high turnover of children, with new ones arriving while others were reinserted to families of origin, extended or adopted. In this way, 25 children were welcomed, but only five remained throughout the research, making it possible to monitor their interactions over time. Among these, only three were in the first year of life and, therefore, were selected as focal infants, with their fictitious names: Luis Guilherme, accompanied from 10 to 13 months of age; Pedro, from 4 to 7 months; and, Lucas, from 7 to 10 months. In the present study, the specific case of Luis Guilherme – focal infant who most interacted with other children, will be highlighted, possibly due to his greater motor maturity that already enabled him to move around the environment, as discussed below. As interactive partners of the focal baby, the infants Lucas (7-10 months) and Beatriz (17-20 months) were also highlighted.

Data collection instruments and procedures

To understand the developmental processes of the children attended, the present study was based on the theoretical-methodological perspective of the Network of Meanings (Portuguese acronym: RedSig), developed by Rossetti-Ferreira *et al.*¹⁵, which values looking at complexity and multiple constituent aspects of the developmental processes of people in situated interactions. The Network of Meanings (RedSig) guides the understanding that, marked by social discourses and political-economic elements, the institutional care have a context of human development that circumscribe certain possibilities of forms of relationships and socialization for children, depending on the objectives of the institution, the roles assigned to the people present there, the routines, practices, materialities and the organization of that space. Thus, it is understood here that peer interactions are considered to be dialectically constituted and constituent of these contexts.

Based on this perspective, for the collection it was decided to work with video recordings, organized so as not to focus only on a particular baby (an isolated individual), but in the broader environment, recording the interactions and social exchanges in which the focal infants were involved, allowing to apprehend the shared experiences, conflicts and other aspects that made up the interactive universe. Thus, video recording was presented as an instrument capable of capturing details and enabling the material to be taken up whenever necessary and each time with the opportunity to pay attention to a different aspect¹⁶.

Such recordings were made weekly, one hour with each baby, over three months, on different days of the week and periods of the day, to describe, in the most comprehensive way possible, the infants' routine and the different interactive dynamics. To conduct this study, we used a clipping of this material, analyzing eight consecutive weeks of video recordings, each lasting 20 minutes (Figure 1).

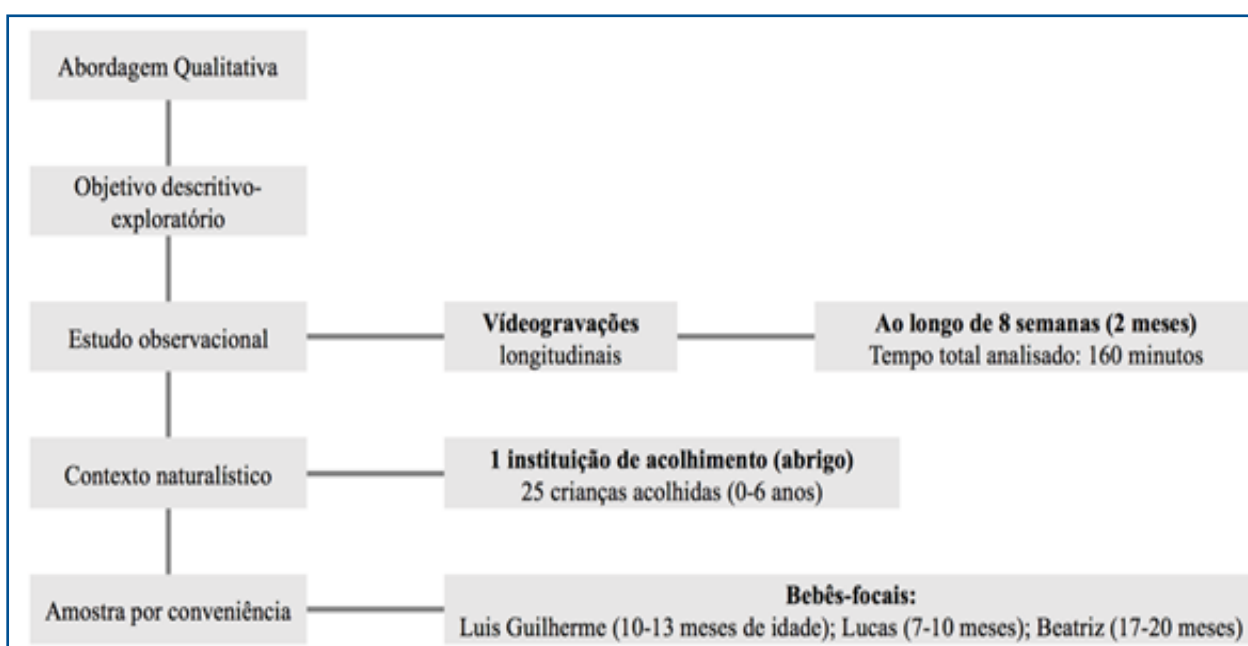


Figure1: Flowchart - methodological design

Data analysis procedures

Data analysis focused on: 1) the frequency of peer interactions (including, compared to the frequency of interactions with adult caregivers); 2) the partners' responsiveness; 3) the emotional and communicative resources involved; 4) the psychosocial aspects constituted and constituting child sociability in this context; and, 5) the organization of the environment, understanding it as one of the circumscribing elements of limits and possibilities in peer interactions.

Seeking to describe these points, the data analysis was conducted in three stages. First, a general mapping of the video recordings was made, seeking to demarcate the occurrence of Luis Guilherme's interactions with the other children. The "interaction" was understood as a potential for regulation between components of the interactive field¹⁷. Thus, "regulation" refers to behavior that is socially directed towards the other or due to the other, regardless of whether there is a response, which can occur even at a distance and without the child realizing that he is regulating the behavior of the other. "Co-regulation" involves reciprocity and mutually directed behaviors¹⁷. Based on this operational definition, the following were recorded: episode duration; involved participants; place where they were; plot of events (the central motive); and expressive and communicative resources used. In addition, this mapping sought to describe the organization of the physical and social environment in which the interactions of the peers took place (or not).

In a second moment, to learn if there were preferential partnerships¹⁸, a systematic observation of the video recordings was carried out, seeking to quantify the frequency of occurrences of the following categories: "attention orientation", "proximity search/ maintenance" and "social exchanges" (Co-regulated interactions) by Luis Guilherme directed at children and adults in this context, considering the responsiveness of the partners. Equally, the actions of infants/children directed to Luis Guilherme (such as vocalizations, touches, seeking proximity, etc.) were quantified, accounting for the presence or absence of Luis Guilherme's response to these behaviors. Yet, the actions of adults directed to Luis Guilherme (such as speeches, objects offered, etc.) were counted, also counting the infant's response rates.

In a third moment, two interactive episodes were selected, referring to the two days when Luis Guilherme's interactive rates with his peers were higher. It is an episode from Week 2 and one from Week 5, in which L. Guilherme interacted, respectively, with Beatriz and Lucas. Such episodes were selected for their specificities that allow discussing psychosocial aspects of infants' development.

It is worth mentioning that the research was approved by a Project in the Research Ethics Committee (under nº 494/2010-2010-1-824.59.5), in accordance with the current rules and resolutions with regard to research with human beings¹⁹.

RESULTS

Organization of the environment as a constituent of peer interactions

Two spaces of the institution stood out as the main interactive fields of the age peers: the nursery and the balcony. The nursery looked like a pediatric ward. The cribs were positioned side-by-side, in two parallel rows and forming a central corridor through which the caregivers passed. At the end of this "corridor" were small beds, where children aged two to six years slept. Therefore, the nursery consisted of a large room where all the children slept (except for the newborns who were in another room).

The balcony, on the other hand, consisted of a large covered external space, surrounded by low walls and iron railings, with only two small access gates, which were kept closed with locks located at the top, so that only adults could open them. Few toys were available, still less within reach of infants. In this context, it was not uncommon to observe children playing and manipulating the shoes that fell from their feet or the clothes themselves, transforming them into pivotal objects in interests, approaches, disputes and negotiations.

Infants up to four or five months of age spent most of the time in the nursery, in cribs or strollers, having little or no contact with the other children in the household. The possibility of getting closer to the peers started to be greater after six months, when they were placed in chairs or strollers on the balcony, under the supervision of a caregiver or volunteer. On these occasions, it was observed that older children (who used to stay on the balcony) were not indifferent to infants. They directed their attention, sought proximity and inter (action). From the moment the infants achieved greater motor autonomy and were able to sit, creep and crawl, they started to be placed (at certain times) on the floor of the balcony or in walkers.

Due to the circumference of the walkers, infants were even more removed from the proximity and contact with other children, in addition to being unable to reach objects and toys on the floor. Often, when they tried to get closer, they ended up passing the wheels on the feet of the other children, who retaliated by pushing or moving the infants (from/in the walkers) to the other side of the balcony. On the other hand, in addition to disputes over spaces, toys and objects, it was also possible to perceive the care of older children with infants, for example, helping them to reach a toy or object of interest, or drawing the adult's attention to their needs.

Luis Guilherme and the changes in his interactions with other children

The employees' description of Luis Guilherme was unanimous: a calm, peaceful baby, who did not give any trouble. In fact, the Psychologist reported feeling worried, because he was so calm that no one noticed him and he ended up getting too much in front of the television. The cook reported a similar impression, saying that he was "so good" that no one used to pick him up. For Nice, one of the caregivers, even when he was sick, he did not give any trouble: he ate and slept normally.

In line with these characteristics, the video recordings showed that “crying” was not an expressive resource frequently used by Luis Guilherme. The “look”, the “crawl towards”, the “babble” and “pointing” were its main resources directed to specific partners.

In the beginning, Luis Guilherme was a baby who faced little clashes with other children, and it was common to see him retreat or give up easily of toys that were being disputed. Unlike most, he did not usually cry when a child took an object/toy from him, as was observed in an interactive episode of the first month of recording, involving the pair of brothers Paulinho (3 years old) and Sofia (2 years old). On this day, Luis Guilherme (10 months) was sitting on the floor holding a shoe when Paulinho and Sofia approached and took the object. He then crawled out in the opposite direction, not getting involved in the dispute with the siblings.

In another week, a similar episode occurred, this time involving Beatriz (18 months), who was playing with a small green ball that aroused Luis Guilherme’s interest. As he approached Beatriz (crawling and creeping) and tried to take the ball from the girl’s hand, she moved away, but not too far, as if the possibility of the baby approaching was part of the game. This cycle (of approach-separation) was repeated a few times until he sat down and stopped following her, keeping only the watchful eye in her

direction. Then, Beatriz threw the ball away (away from her) and, immediately, she went towards it (approaching the ball), accompanied by Luis Guilherme who again tried to reach it. However, two older children entered the room and took the ball, resulting in the immediate withdrawal of Luis Guilherme and Beatriz from trying to get the toy.

A few weeks later, when he was already able to stand (in an upright position) and learning to walk, Luis Guilherme (12 months) was entertained by a toy hanging on the wall when Eduardo (2 years old) approached to play with it. Unlike the previous situations, Luis Guilherme stretched out his arms and put his hand on Eduardo’s chest, imposing a gesture away from the toy. However, Eduardo did not move away. Then, Luis Guilherme pushed Eduardo and placed his hand over his hands. It was observed, therefore, how the achievement of the erect posture and the ability to walk enabled other movements for the baby, and reflected in his way of interacting with other children.

Interactive frequencies

Table 1, below, depicts Luis Guilherme’s behaviors towards children and adults during two months of video recording (eight weeks), in which the baby was 11 months and 6 days old at Week 1 (W1) and 12 months and 24 days in Week 8 (W8).

Table 1: Luis Guilherme’s behavior towards children and adults

		W1	W2	W3	W4	W5	W6	W7	W8
ORientation of attention to	Children (total)	4	21		3	19		3	6
	Children (with response)	3	5		2	11		1	2
	CAREGIVERS (total)	16	9	6	1	1	5	12	
	CAREGIVERS (with response)	2	1	2	1	0	3	2	
Proximity search and maintenance	Children (total)	3	5		2	6		2	1
	Children (with response)	1	1		1	6		0	0
	Caregivers (total)	8	12	3	2	1	2	1	
	Caregivers (with response)	0	1	3	0	1	0	0	
Social exchange	Children (total)	1	3		6	3	1		2
	Children (with response)	1	3		3	3	1		1
	Caregivers (total)	2				1			
	Caregivers (with response)	2				1			

As can be seen, the frequency of behaviors occurrences by Luis Guilherme towards children and adults was low, as mentioned by the professionals in the interviews. This coincides with the data observed in the video recordings that, usually, he spent more than half of the recording time in individual activity, removed from interpersonal interactions.

When behaviors such as “orientation of attention” and “proximity search/maintenance” occurred, these were more often directed at adults. However, although adults were the partners that Luis Guilherme was most oriented to, such events aimed at children were also significant. Children were even more responsive than adults. In other words, despite the lower percentage of behaviors directed by Luis Guilherme to children, compared to adults, the percentages of responses from those were still much higher. This means that more social exchanges of

Luis Guilherme were observed through joint activities involving reciprocal interactions with other children than with adults.

In the second week (W2) and in the fifth week (W5), the rates of interactions with peers were higher, especially with regard to the orientation of attention, which coincides with the days when the group of children was on the balcony, playing, running, jumping and screaming, activities that fixed Luis Guilherme’s attention. Thus, it was observed that the place where he was placed and the activities performed there by or between the peers proved to be a great attraction for the baby, contributing to favor not only the children’s encounters but also their interactions and co-regulations.

In this sense, Table 2 shows actions of other infants and children towards Luis Guilherme and his response rates.

Table 2: Actions initiated by other infants and children towards Luis Guilherme

		W1	W2	W3	W4	W5	W6	W7	W8
Conversation/Talk with the baby	Total	3	2			1			
	with response	3	1			0			
Walks/crawls towards the baby	Total	3	5			1		1	2
	with response	3	3			0		1	0
Maintains proximity	Total		1						
	with response		1						
Move the baby	Total		3						
	with response		2						
Touch	Total		4		2				
	with response		3		2				
Caress	Total		2						1
	with response		1						1

It is observed that the most frequent action of the other children towards Luis Guilherme referred to “walking/crawling towards the baby”, evidencing the search for proximity, which obtained Luis Guilherme’s responsiveness index to these children.

On the other hand, Table 3 shows the behavior of adults towards the baby and his response rates. The expectation was that these were more frequent than the children’s behavior expressed in Table 2, a hypothesis that was not confirmed. What stands out, in Table 3, is Luis Guilherme’s high level of responsiveness to adults; that is, he was a responsive child, particularly when interacting with adults.

Finally, we also sought to observe who were the children that most interacted with Luis Guilherme and who were most involved with him in social exchanges, in joint activities. The data revealed that Beatriz (18 months) and Lucas (8 months) had differentiated indexes, including the high number of interactions in the second (W2) and fifth (W5) weeks, highlighted in Tables 1 and 2. To carefully analyze part of the content of these interactions, among the episodes, two were selected and will be presented below: one of Luis Guilherme’s interaction with Beatriz, in W2; and, another one of Luis Guilherme’s interaction with Lucas, in W5.

Table 3: Actions initiated by adults (employees or volunteers) towards Luis Guilherme

		W1	W2	W3	W4	W5	W6	W7	W8
Conversation	Total	2	1	1			3	1	
	with response						3		
Smile	Total	2					2		
	with response	2					1		
Offers object	Total			1			2	1	
	with response			1				1	
Plays	Total	1					1		
	with response						1		
Caress	Total			2			1		
	with response			2			1		
Touch	Total						2		
	with response						2		
Picked up	Total			3					
	with response			3					

Episodes description

Luis Guilherme and Beatriz: a case of empathy (Figure 2)



Figure 2: Luis Guilherme and Beatriz: a case of empathy

Luis Guilherme (11 months and 11 days) was on the walker, stuck in the iron gate gap between the balcony and the laundry room. There, he looked in the direction of Luzia (caregiver), while she put clothes in the washing machine (Fig.2, A). After a few minutes standing at this gate, Beatriz (18 months) approached him and tried to move him away from the gate, pushing him out of the gap, away from the laundry room (Fig.2, B). As a result, the walker turned to the balcony where the other children were playing, putting clothes on their heads. Thereafter L. Guilherme started to focus his attention on the children's

play. After a few moments, Luzia went behind her walker, pushing it with her foot, trying to get it out of her way (Fig.2, C), which made the baby return to the caregiver's attention. However, she passed him and followed quickly towards another child, who was without his pants and with a shirt over his head. At that moment, L. Guilherme turned the walker to the opposite side where Luzia was and proceeded determinedly towards a toy hanging on a part of the grid that separates the laundry room from the balcony. Luzia then went behind him, taking the child with her (Fig.2, D). L. Guilherme noticed this movement

and looked back, watching her pass hand in hand with Eduardo (child with the cloth on his head), going towards the nursery (Fig.2, E). Again, he followed the caregiver, heading towards the nursery entrance. Beatriz followed L. Guilherme with her eyes and noticed that Luzia closed the door to the nursery. As L. Guilherme had followed her,

he ended up standing alone at the door, in a dark corner. Beatriz went to L. Guilherme, rubbed his head (Fig.2, F) and pushed his walker back onto the balcony (Fig.1, G), towards the toy that was hanging on the laundry rack (Fig .2, H).

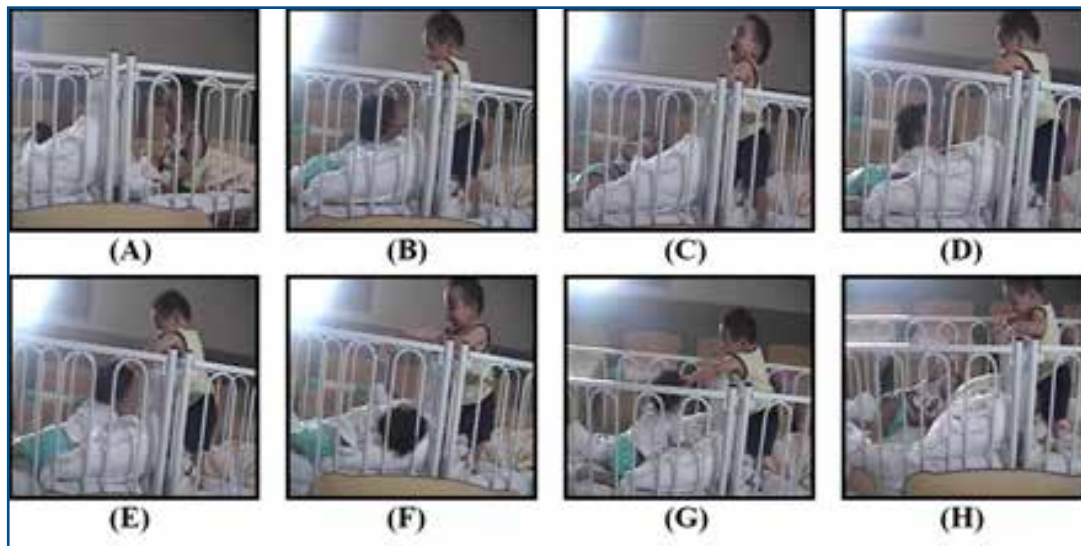


Figure 3: Luis Guilherme and Lucas: an engaging encounter

Luis Guilherme and Lucas: an engaging encounter (Figure 3)

Luis Guilherme (1 year and 5 days) and Lucas (8 months and 24 days) were each in their crib, in front of the TV (Fig.3, A), with other children around. Their respective cradles were leaning against each other, grid with grid. Lucas was lying, looking at the TV and Luis Guilherme was sitting, touching a teddy bear. Suddenly, Lucas looked back, turned and positioned himself on his knees in the crib, facing Luis Guilherme. He immediately smiled, standing in the crib with the support of the railing. Lucas smiled too. At that moment, Luis Guilherme stretched his arm over the crib railings, towards Lucas. He tried to get up, but as he was leaning on a soft pillow, he ended up unbalanced, failing. Luis Guilherme extended his arm even more towards Lucas. The latter, in turn, looked at Luis Guilherme, raised his body by lifting his head and stretching his neck, so that Luis Guilherme managed to touch his hair (Fig.3, B). Then, Luis Guilherme removed his hand from Lucas's head, who (clumsily) turned (or fell) to the left side, also moving away, but still looking at Luis Guilherme (Fig.3, C). Again, the two tried to touch each other: Luis Guilherme reached out again to Lucas and he tried to get up and stay firm on the pillow, getting more within reach of the other, allowing him to run his hand through his hair again. Still clumsily leaning on the pillow, trying to balance himself with his body stretched, Lucas lowered himself a little, but raised his face, maintaining a face-to-face interaction with Luis Guilherme (Fig.3, D). For the third time, the two repeated the same movements: Luis Guilherme stretched his arms over the crib rail and Lucas approached, enabling the partner to touch his head (Fig.3, E). When Lucas lost his support on the pillow, he shrunk and turned to his right side, raising his hands, he managed to hold Luis Guilherme's hand, who in turn smiled (Fig.3, F). For a moment, Luis Guilherme

was distracted by something in front of him while Lucas also laid down, but still looking at the other boy. Then, once again, Lucas stood up, approached Luis Guilherme, who stretched his arms over the crib and rubbed his head (Fig.3, G). At that moment, Luis Guilherme smiled at Lucas and he lay down again, but not without extending his arms towards Luis Guilherme one last time (Fig.3, H).

DISCUSSION

Based on the results of the present study, from the analysis of the direction of expressive features of infants; the existence of responsiveness, selectivity and preferential partnerships; and, considering the organization of the physical and social environment, it is possible to discuss some psychosocial aspects that are part of child sociability, particularly in the interactions of the children foster cared. Although only one particular case was selected as the main focus - the experiences lived by the baby Luis Guilherme in the host institution-, which makes statistical generalizations unfeasible, even so, from a socio-interactionist perspective¹⁵, it is understood that the social and cultural are crossed in the individual; or, that a snapshot of reality covers aspects consistent with the broader context^{12,20}.

In this sense, one of the results that stood out was the fact that baby Luis Guilherme spent most of the time on video recordings in individual activities, alone. When he manifested social behaviors (that is, actions regulated towards a social partner), these were more often directed at adults. In fact, his level of responsiveness to the behavior of adults towards him was high. However, although contact with other children occurred less frequently, it was in these meetings that it was most observed the occurrence of social exchanges, that is, reciprocally oriented (co-regulated) social behaviors¹⁷. The other children also proved to be more responsive social partners than adults.

In addition, even more, the other children addressed to Luis Guilherme a number of behaviors equivalent to that of adults. Therefore, although Luis Guilherme constantly sought to establish and maintain contact with the adults responsible for his care, it was his interactions with other children that were most effective and resulted in responsiveness, reciprocity and sharing.

This set of results opens way for different reflections and discussions. Firstly, analyzing the interactions between infant and caregivers, the results corroborate to other findings in the literature that indicate the low occurrence of interactions between adults and infants in the institutional care^{12,13,21}, with few sensitive and contingent responses from the caregiver to the infant, many of them representing impersonal and ritualized care, guided by minimum dialogue, demarcating an “institutional style of care”²². Such results are worrisome since - considering social interactions as pillars on which complex functions of the human psyche are structured and developed – the low occurrence of infant-caregiver interactions can constitute an obstacle to fundamental experiences, alienating the children from more complex forms of sociability and immersion in the semiotic universe of our culture¹².

In addition, responsiveness has been highly correlated with the quality of care offered to infants. Sensitive and committed care, involving sensitivity, synchrony and responsiveness, have frequently appeared in the scientific literature as associated with the best social and emotional adjustment of the foster child²³. Therefore, in the present study, the low responsiveness of adult caregivers is also a concern, as this aspect is related to insecure attachment patterns and to impairments in socioemotional and cognitive development²⁴. On the other hand, despite this low responsiveness, baby Luis Guilherme did not fail to seek proximity and direct social behaviors to his caregivers. This result highlights the role of adults in structuring children’s activities, especially for infants that small and dependent¹⁵. Even when they are not directly interacting with the child, the caregiver regulates his actions, including the way they organize spaces, positions themselves and position the child in it¹⁵.

In this same context, the other children proved to be privileged partners in interactive exchanges. Although less frequent, infant- infant/young child interactions stood out as rich experiences of emotional socialization, as evidenced by the episode “Luis Guilherme and Beatriz: A case of empathy”. In this cut of the video recordings, representative of the daily life of the foster infants, it was observed how much the presence of caregiver Luzia regulated Luis Guilherme’s behaviors and the baby’s effort in the search for contact with her. On the balcony – where several children played, shouted and ran, while Luis Guilherme watched them -, the caregiver’s approach proved to be an attraction for the baby, who, showing preference and selectivity, soon started to follow her through the walker. However, while the caregiver remained attentive to her chores (doing laundry), without addressing Luis Guilherme, Beatriz (baby just 18 months old) directed different behaviors towards him: she dragged and turned his walker, and tried to attract attention from his colleague to the children who played there. Despite

this, Luis Guilherme continued most of the time seeking the proximity of caregiver Luzia, until she entered another room and closed the door behind her, leaving the baby alone in a dark corridor. Observing the situation, Beatriz dragged him back, placing him in front of a toy that had previously interested him; still, she gestured to him, running a hand through his hair.

These results contribute to the reflection and discussion on the contents that can constitute the interactions between infants and young children; how much these interactive encounters can promote socio-emotional skills, regulation and socialization of emotions and rich experiences from the point of view of socio-affective development. The Liddle *et al.*¹¹, discuss, children’s socio-emotional competence, especially in early childhood, has historically been underestimated. Infants were described as naturally self-centered; unable to adequately identify, share and respond to the affective state of the other social being; without an awareness of the mind, intentions and subjective state of the people around them. From the 1970s onwards, such assumptions are seriously questioned, for example by the notorious studies by Trevarthen²⁵, who affirms the existence of an intersubjectivity since the beginning of life. The author discusses the ability that young children develop to understand the thoughts and feelings of others, connecting and adjusting to affective states and expressions, which allows very rich exchanges in the interactions of infants with their partners, involving abilities to connect, engage and communicate. Since then, researchers have dedicated themselves to the study of prosocial behaviors in young children, demonstrating and discussing the “tendency towards basic interactional sharing since birth, which would include synchronizations, equalizations and empathic patterns”²⁶.

The Episode between Luis Guilherme and Beatriz also draws attention to these empathic patterns present in the interactions of young children. Or, at least, it allows us to raise the question: “would Luis Guilherme’s experience - in the face of a caregiver who ignored him - have it reverberated in Beatriz to the point of leading her to act with empathy?” Countless empirical studies that gather photographic and observational records from different cultures portray the occurrence of this type of behavior among young children²⁶. In these studies, empathy is usually described as the ability to understand and share the emotional state of the other¹¹, presenting an affective response depending on what the other feels^{1,10}.

Empathy involves affective and cognitive components that lead the subject to do for the other what they would like for themselves²⁶. And, in fact, when she keeps herself regulated by her colleague, observing him, Beatriz seems to perceive his intention (“he wants proximity and contact with the caregiver”); and she also seems to realize that, despite his efforts, Luis Guilherme does not find reciprocity and attention from the caregiver. This situation mobilizes her to the point that she herself offers him a response that he was not getting from the other person: she tries to integrate him into the group; she tries to distract him with a toy and gives him an affectionate gesture.

This set of behaviors by Beatriz does not mean or imply that she was acting with a conscious intentionality, as traditionally is discussed in the field¹⁰. But they can be due to a level of interpersonal perception, in line with her own experiences embodied in that environment, as discussed by Amorim and Rossetti-Ferreira²⁷. Therefore, with these reflections, it is understood that Beatriz demonstrates the ability to experience and understand the emotional experience of the other and respond in an adjusted way, with engagement and pro-social behaviors. As in other studies on care practices among children^{10,13}, Beatriz reveals behavioral patterns that mimic typical adult care, such as teaching, helping, entertaining, comforting, offering, affectionately touching, among others that usually appear throughout the second year of life²⁶.

Finally, still with regard to the episode “A case of empathy”, another question arises: “if Beatriz’s re (actions) can be discussed in the light of studies on socio-emotional competences and empathy, what would be the effects of these (inter)actions for Luis Guilherme?” As highlighted by Bussab²⁶, in addition to the possibility of both infants developing processes related to self-awareness, reciprocal equalizations, synchrony and intentionality, this interaction also allows Luis Guilherme to realize that his actions have repercussions on the other (even if not the adult); another who attends him, who answers him, who comforts him, contributing to his emotional regulation.

In this episode of basic sharing (as they are emotions being shared), with the possibility of emotional comfort, Beatriz and Luis Guilherme are going to signify each other as reference partners, something that the results themselves confirmed, demonstrating the different frequency of interactions and exchanges between them. Therefore, infants are involved in a socio-affective context that is closely related to the process of bonding²⁶, understanding that affective bonding develops in an interactional context with exchanges adjusted in response to the other’s signals, implying an individualization of the other: “I know who you are and what we did together”¹⁰. In these terms, the interaction between infants instigates to think about the interesting and little studied process of (trans) formation of bonds between such young children.

Many of these notes about the constituted and constituent processes of child intersubjectivity can also be seen in the other described episode (“An engaging encounter”), in which Luis Guilherme (12 months old) interacted with baby Lucas (9 months old). Separated by the railings of their respective cribs, but through looks, smiles, gestures, postures and reciprocally oriented movements, engaged in the search for physical contact, touch and proximity to each other, the infants traced an interactive plot in which the co-regulations, synchronized behaviors, sensitivity to subtle mutual signals and coordinated cooperative actions, aspects also observed in the interactions of infants peers, in previous studies carried out in daycare centers^{1,2,6,8,10,28-30}.

As described in the study by Viana and Pedrosa²⁹, the effort made by both infants towards a common goal (to get closer, to touch) reveals the development of the ability to coordinate cooperative actions according to shared intentions and goals. Interactions of this nature

promote the development of important cognitive skills for the recognition of the other and of themselves as an intentional agent, in addition to promoting the acquisition of new resources and putting their limits to the test. Along this line, Costa and Amorim²⁸, discuss the relevance of the occurrence of synchronization and coordination among infants that small, since for some theorists, the coordination of one-year-old children seemed to be a coincidence, and that could only be established from the three years of age.

Studies by Trevarthen²⁵ on child intersubjectivity, focused on mother-infant dyadic interaction, already recognized the infants’ ability to engage in expressive repertoires effectively coordinated with a sensibly connected adult¹¹. Going further, the empirical evidence from the present study demonstrates that such a skill can occur and develop in peer interactions. Although motor immaturity and the absence of verbal language are a fact, this does not prevent the fluidity of the interaction and the search for the (touch of the) other. Therefore, the interaction between Luis Guilherme and Lucas reveals an experience of interpersonal engagement where attentional, emotional and motivational processes that are fundamental for child development operate¹⁰.

No less important are the affective aspects of this interaction. The gaze and smile are powerful communicative resources that guarantee the maintenance of attention and mutual engagement. As Dentz³⁰ showed, in a study in daycare centers, smiles promoted more repercussions and reactions among infants peers than crying; and infants not only smile in peers, but of peers and with peers. It is verified, therefore, as if through various expressive and communicative resources (including emotions, vocalizations, gestures and movements), that infants are directed to and (co)respond differently to specific partners^{1,8}.

In addition to the preferred partnerships, the general mapping of the interactions allowed us to observe that Luis Guilherme’s most relevant behavior towards other children was the look, the attention orientation. This draws attention because, traditionally, the gaze has been considered by the literature as a passive action, indicating that the child does not engage in activities and relationships⁶. However, empirical studies have revealed the opposite, demonstrating that the notion of infants’ activity must expand beyond body movements, displacements and gestures¹. The look has been one of the most observed communicative resources in the interactions of infants, because, in addition to the vision, the look involves a relational sphere, which allows actions to track, follow, (co)respond and alternate, communicating to others their interests, attentions and preferences. It also triggers actions in the other baby/child, who, when faced with the other’s gaze, vocalizes, approaches or moves away, smiles, offers an object, etc.⁶.

Therefore, infants learn by observing and experiencing the actions of other children^{1,6,7}. Considering learning not as a synonym for acquisition (a final product achieved), but as a dynamic process of perception-action²⁸ that involves imitations, confrontations and acknowledgments, observation allows the baby to

perceive, for example, that a peer's action on an object results in a specific effect (a noise sounds, something moves, a door opens, changes color, etc.). In these moments, new possibilities of action are opened, as is the case of imitation, reproducing a result.

Through imitation, infants return to elements previously observed, experienced and negotiated in interactions with peers¹. Imitation is a trigger for the occurrence of coordinated actions, because when imitating the partner's behavior, even without conscious intentionality, a child signals the intention to play together²⁹. These studies show that looking, an orientation of attention and observation are typical activities of this stage of life, which allow spatial coding, a perception and participation in the environment, through which students learn about themselves and about others, in their relationship with the social other.

In the present study, the look and attention to the actions/activities of the peers frequently unfolded in displacements. That is, as Luis Guilherme's motor skills develop, he began to move around in function of the caregiver and other children, both approaching and distancing, depending on familiarity and the elements shared with certain peers. A similar result was found in the analysis of interactions of pairs of infants in daycare centers²⁸, in which it was found that the development of exploratory and locomotor skills coincided with the increase in the frequency of physical contacts and in the possibilities for the occurrence of social exchanges, as children could move and reach other children.

It is worth highlighting the role of objects in these processes, which are attractive that arouse the interest of babies, especially when they are in the hands of the other child, who, when shaking, playing, hitting, moving or throwing, give them movement and life^{1,8}.

All these considerations about the role of observation, imitation, locomotion and objects in the interactive processes of infants are evidenced in the reported episode involving Luis Guilherme, Beatriz and the little green ball. As mentioned in the Results, Luis Guilherme watched closely as Beatriz played with the ball, until her attention unfolded in the attraction and displacement towards the infant-object dyad. One hypothesis is that Beatriz, when she noticed her colleague's approach, moved away, not to avoid him, but to integrate the cycle of approximations-distances that was repeated a few times. When Luis Guilherme stopped following her, she made a new use of the same object (ball), tossing it away, apparently to attract Luis Guilherme's attention again. Thus, Beatriz, who previously kept possession of the object, reversed the game, placing herself at a distance from him and trying to get closer. Luis Guilherme, observing the novelty, also moved back towards the object, not only approaching Beatriz, but beside / next to her, in a coordinated movement, both sharing the same movement and the same focus of attention towards the ball.

Analyzing a similar situation, Costa and Amorim²⁸ discuss how the acquisition of displacement capacity is not only a milestone in motor development, but also social and cognitive. The locomotion is being co-constructed in the interaction, being able to promote/ inhibit (dis) continuity

and (re) arrangements in the interactive processes. Thus, in addition to the maturational aspect, motor development is constituted and interrelated with relational, contextual and cultural aspects. In this context, roles are being assigned in an interaction that dynamically changes with each gesture, each movement^{1,8,28}.

Therefore, as the Network of Meanings¹⁵ emphasizes, transformations in children's activities do not occur in isolation, due exclusively to maturation processes, since biology itself is socially oriented. Interactions with the other (in this case, with the peer) are an arena and engine of these developmental processes, where multiple elements are interrelated. For this reason, the episode between L. Guilherme and Beatriz with the green ball shows that, in addition to the possibility of approaching or distancing from the pair/ object of interest, motor development is also related to social positions and networks of meanings built within these meetings³.

These considerations are more evident when analyzing another result: the postural transformations of Luis Guilherme (more specifically, the acquisition of the bipedal posture followed by walking without support and the release of the hands) directly reflected in the way he positioned himself in the relationship with each other and how it was meant in interactions with peers. As a "good" infant, who avoided confrontations and disputes with other children, L. Guilherme started to reposition himself in front of the pair as he managed to stay upright, negotiating spaces, distances / approaches and toys. These aspects are also illustrated in the episode in which L. Guilherme, through gestures, body (im) positions and vocalizations, prevents Eduardo from touching an object he was manipulating.

This entire path traced so far speaks of how Luis Guilherme's transformations were dynamically reflected in the (re) configuration of interactions with his peers. His positioning in the interactive field has been transformed and, together, the meanings of himself, the other and the surrounding environment¹⁵. Furthermore, it shows the way in which new resources were demanded in the face of the challenges that the children mutually imposed (by not getting out of the way, pulling, pushing etc.), contributing to the co-construction of new skills²⁸. However, an important element is missing from this discussion: the adult caregiver's participation in children's interactions.

The literature on infants interactions shows the support of adults and their mediating role in social exchanges, including peers. "It accompanies and helps to signify the situation of an encounter that is effected by the children's own action"¹. Six-month-old infants tend to react to their peers, but need maternal support to continue the interaction, showing how mothers contribute to children's social engagement¹¹. Adult support also helps the child to coordinate joint care with other children and is related to the increase in communicative offers in these meetings⁴.

However, unlike these studies above, the observations of the present research showed that, often, the children welcomed interacted with each other in the absence of the mediation of the caregivers. This data possibly has a slant, which is the presence of the researcher

being interpreted by the team as an element of safety for children. This slant does not influence the results of the research, does not alter its conclusions, since the objective of the study was not to describe the forms and practices of adult mediation in peer interactions - even though the importance of this process is discussed. Even so, in most peer interactions where caregivers were present, they positioned themselves as spectators, seeking to ensure the safety and physical integrity of the little ones. However, they did not play an active and directly interacting role with children, responding them when sought and not to encourage them in this meeting with the couple, not presenting an action oriented to the promotion of varied experiences, learning and meanings.

If, on the one hand, adults were not usually present in the interactions of the children being welcomed, on the other hand they were present in the way the environment was structured. Broadening the focus of analysis, it appears that the adult can promote or discourage meetings between peers from the way he organizes the care environment, that is, even if he is not directly present in the interactive episodes "his mediation as a pedagogical practice is materialized in the organization of the environment with implications for the (re) (inter) actions of children"²⁸.

As shows the studies by Campos-de-Carvalho³¹, who devoted to the analysis of the role of spatial arrangements in day care centers and discussed the planning of collective children's environments, show that young children tend to seek closer proximity to the adult caregiver, using the area more frequently, around it and crowding around it, when spaces are emptier of objects or when furniture and equipment in a room are leaning against the wall, forming an empty central space.

This type of structuring was identified as the most common arrangement in Brazilian daycare centers at the time (and it is similar to the arrangement of this investigated institution, the balcony with only the physical structure of the railings and walls, with no toys and no furniture available). On the other hand, Campos-de-Carvalho³¹ also argues that when the spatial arrangement offers several circumscribed areas, formed by small areas, bounded by low barriers (such as furniture, walls, low shelves with a support surface, unevenness of the ground, tall objects and boxes, among other different textures and shapes), there is a tendency to increase the number of groups of children, with a higher occurrence of socially directed behaviors among them³¹.

In this sense, the spatial arrangement proves to be an important circumscription of development, which may favor or hinder certain interactions, activities, games, roles and positions, providing certain meanings. The spatial arrangement is the basis on which infants-environment, infants-contemporary and infants-educator interactions are organized. Certain positions, certain viewing angles delimit the children's experience and constitution process. Based on this perspective and analyzing the characteristic elements of the institutional physical environment of the case study in question, in which the strong presence of crates, cribs, strollers and walkers stood out, making it difficult to approach and make physical contact between children, we understand if the spatial arrangement itself

constituted itself as an obstacle to a greater occurrence of encounters between children^{31,28}.

These objects, materials and furniture are elements belonging to the socio-historical matrix that materialize in the organization of physical space, routines and practices, circumscribing the (im) possibilities of interactions between children^{3,27}. This aspect can be seen by the way the institution's spatial configuration contained elements similar to a pediatric ward (with rows of cribs arranged side-by-side and with 12/36 hour employees' work shifts) and a prison (grids of iron and padlocks), referring to the old orphanages of past centuries and indicating the presence of historically given circumscribers¹².

Although the laws and guidelines in force already recommended the planning of welcoming environments to guarantee a family atmosphere, cozy, with an emphasis on personalized service, stimulating social exchange and building bonds³², it has nonetheless identified itself in contact with these institutions aspects inherited from other historical times, perpetuating in daily practice an institutional style of caring and relating^{22,33}. The past is updated through the meanings inscribed in the types of spatial organization, in the discursive practices, in the forms of relationships, evoking, acting and contributing in a creative way to configure the here-now¹⁵.

Despite this structuring, in view of the potential of the intersubjective capacity of the human being and from very early age of young children, it is understood that even with limitations of occurrences, the interactions of infants with other welcomed children enable them to develop founding skills, competences and capacities. Although these encounters are often brief and fortuitous, marked by the awkwardness characteristic of infants neuromotor maturity, the experiences they experience are embodied and (trans) continuously form their meanings about themselves, the other and the world^{1,2,15,27}.

For this reason, it is essential that the promotion of social exchanges among the children themselves is on the agenda of policy agenda and special protection services, contributing to the qualification of the care of children received. On the agenda of discussions on political-pedagogical projects and care plans for early childhood care programs, one should consider the mediating role of adults in the organization of spaces, and the importance of the care environment to be challenging, creative and stimulating, with obstacles, songs and objects that allow interactions and varied experiences³⁴. With the constant presence of the caregiver and structuring movement zones, it offers a welcoming, safe and protected environment, where children can explore together, move around and have contact not only with the adult, but with the couple, together with the which also builds your knowledge, your language, culture and yourself as a subject^{1,20}.

Furthermore, starting from a historical-cultural perspective, and more specifically from the Network of Meanings¹⁵, which discusses the complex character of developmental processes, situating them not in an isolated way in the person, but in and through culturally given relationships and contexts, the present study discussed psychosocial aspects characteristic of child sociability, especially with regard to experiences of welcomed infants.

Expanding the focus beyond the infant (individual) or the infant-adult dyad, other elements of the interactive process were considered, such as the positions of the various social actors; the organization of the children's environment; the presence of aspects of the socio-historical matrix; and, the configurations of the Networks of Meanings. In dialogue with the literature, it is observed how all these aspects are dialectically interrelated, having concreteness in the here and now of situations, contributing to constitute (or not) interactive fields and socio-emotional experiences, in the midst of which infants interact even with infants and other children, and in this process they (trans) form and constitute their own subjectivity³.

In this sense, the present study contributes to the presentation and discussion of empirical data on infant interactions in a context other than the one traditionally studied. In the light of studies and knowledge in the field of human development, we sought to highlight some of the basic processes in the constitution of important child

skills and competences, contributing to the crucial aspects and characteristics of these processes being intentionally pursued in the qualification of child care and, in particular, to children in vulnerable situations.

As limitations of this work, we highlight the small number of participants monitored in a single reception context, not giving rise to broad statistical generalizations of the results. Despite this limit, it is understood that as an Observational Study, of a descriptive-exploratory method¹⁴, it opens up to little-known social processes, referring to particular groups, enabling the construction of new hypotheses, and qualitative and quantitative indicators that can expand the review of concepts and categories.

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Resumo

Introdução: Com base na perspectiva da intersubjetividade infantil, entende-se que bebês são capazes de interagir com bebês desde muito cedo; e tais interações podem oferecer importantes experiências constitutivas às crianças.

Objetivo: Investigou-se como se dão as interações de bebê-bebês/crianças pequenas em instituição de acolhimento (abrigo), descrevendo: a frequência destas interações; os recursos emocionais-comunicativos envolvidos; a responsividade dos parceiros; e, a organização do ambiente enquanto circunscritor.

Método: Conduziu-se Estudo de Caso descritivo-exploratório, de abordagem qualitativa, acompanhando as interações de bebê focal (10-13 meses) com seus pares (de 4 a 17 meses), em instituição acolhimento. Realizaram-se videografações semanais, por três meses no contexto naturalístico. Categorias como “orientação da atenção”, “busca/manutenção de proximidade”, “trocas sociais” e “responsividade” foram quantificadas e comparadas com interações bebê-cuidadores. Episódios interativos foram minuciosamente descritos.

Resultados: A organização do espaço físico-social foi marcada por berços, carrinhos, portões e grades, com poucos brinquedos disponíveis. Verificou-se que os bebês permaneceram grande parte do tempo em atividades individuais (sozinhos) e seus comportamentos sociais foram mais frequentemente direcionados aos cuidadores. As interações bebê-bebês/crianças pequenas ocorreram em menor frequência e, mesmo assim, foram nestas que mais se observaram atividades conjuntas e interações co-reguladas (envolvendo reciprocidade e compartilhamento). A responsividade dos pares envolveu, inclusive, comportamentos empáticos e pró-sociais (com experiência de engajamento interpessoal), onde operavam processos atencionais, emocionais e motivacionais.

Conclusão: As interações de pares de bebês acolhidos se mostraram pouco frequentes. Mas, quando ocorreram, as crianças demonstraram sensibilidade e responsividade às expressões emocionais-comunicativas dos seus coetâneos. A organização do ambiente institucional mostrou-se relevante circunscritor das interações de pares: pelo arranjo material/espacial que dificultava o contato entre as crianças pequenas; e pela ausência do adulto como agente promotor destas interações. Destaca-se a importância de novas investigações sobre indicadores interacionais no acolhimento de bebês.

Palavras-chave: bebês, criança acolhida, interação social, interação de pares.

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