

INTERACTIONS AMONG BABIES IN DAYCARE: WHAT DO STUDIES SHOW US?

AS INTERAÇÕES ENTRE OS BEBÊS NA CRECHE: O QUE NOS APONTAM AS PESQUISAS?

INTERACCIONES ENTRE BEBÉS EN LA GUARDERÍA: ¿QUÉ NOS MUESTRAN LOS ESTUDIOS?

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ABSTRACT

The aim of the present research is to understand how studies have introduced interactions among babies in daycare. The study is based on Colwyn Trevarthen's theory of innate intersubjectivity; thus, we consider that babies always seek out others to interact with, provoking others. We believe this sociability occurs between babies and adults, but also between babies and their peers, hence the choice to conduct research in a collective daycare setting. It is a qualitative, theoretical study also called "State of Knowledge". According to the collected data, although babies in the age group 4 to 6 months participated in the research, their presence is not significant in the analyzed data in comparison to "older babies" who are already capable of sitting, crawling, walking or verbalizing a few words. This findings confirm the need of broadening research based on new technologies that allow studies to be conducted with both newborns and "older babies". Thus, this study allows for reflections on new research in the field of language and intersubjectivity. These are factors that directly impact everyday pedagogical practices dedicated to babies.

Keywords: Babies. Interactions. Daycare. Theory of Innate Intersubjectivity.

RESUMO

O objetivo da presente investigação foi compreender o modo como as pesquisas têm apresentado a ocorrência das interações entre os bebês na creche. O estudo está embasado no pressuposto de Colwyn Trevarthen sobre a teoria da intersubjetividade inata, assim consideramos que o bebê desde sempre busca o outro para interagir, ele provoca o outro. Consideramos que esta sociabilidade ocorra entre os bebês e os adultos, mas também entre os bebês e seus pares, daí a opção por pesquisas realizadas em ambiente coletivo de creche. Trata-se de uma pesquisa qualitativa, de natureza teórica, que pode ser denominada "Estado do Conhecimento". Os dados mostraram que, apesar de os bebês entre quatro e seis meses de idade, estarem presentes nas pesquisas, eles pouco aparecem nos dados analisados em detrimento dos "bebês maiores" que já sentam, engatinham, andam ou verbalizam algumas palavras. Este dado confirma a necessidade de ampliarem-se as pesquisas com novas tecnologias que permitem realizar estudos desde o bebê

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recém-nascido. Assim, este estudo possibilita reflexões sobre novas pesquisas no campo da linguagem e da intersubjetividade. Estes são fatores que impactam, diretamente, as práticas pedagógicas cotidianas dedicadas aos bebês.

Palavras-chave: Bebês. Interações. Creche. Teoria da Intersubjetividade Inata.

RESUMEN

El objetivo de esta investigación fue comprender cómo se han presentado las interacciones entre bebés en guarderías. El estudio se basa en el supuesto de Colwyn Trevarthen sobre la teoría de la intersubjetividad innata; por lo tanto, consideramos que los bebés siempre buscan a otros con quienes interactuar, provocándolos. Consideramos que esta sociabilidad se da entre bebés y adultos, pero también entre bebés y sus compañeros, de ahí la elección de una investigación realizada en un entorno de guardería colectiva. Se trata de un estudio teórico cualitativo que puede denominarse una revisión del estado del arte. Los datos mostraron que, si bien los bebés de entre cuatro y seis meses de edad están presentes en la investigación, aparecen con menos frecuencia en los datos analizados en comparación con los bebés mayores, que ya se sientan, gatean, caminan o verbalizan algunas palabras. Estos datos confirman la necesidad de ampliar la investigación con nuevas tecnologías que permitan realizar estudios desde el nacimiento. Por lo tanto, este estudio permite reflexionar sobre nuevas investigaciones en el campo del lenguaje y la intersubjetividad. Estos son factores que inciden directamente en las prácticas pedagógicas diarias dedicadas a los bebés.

Palabras clave: Bebés. Interacciones. Guardería. Teoría de la Intersubjetividad Innata.



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INTRODUCTION

The aim of this research is to understand how previous research has addressed interactions among babies in daycare. Accordingly, assumptions in Colwyn Trevarthen's theory of innate intersubjectivity allowed taking into consideration that babies always seek to interact with others, they tease the others; in other words, the baby "is born with a receptive awareness of other peoples' subjective states and seeks to interact with them" (TREVARTHEN et al 2022, p. 26).

Assumingly, this sociability takes place between babies and adults, but also between babies and their peers. This is why the choice was made to conduct a research in a collective daycare center, given the like interactions among babies in the same or in different age groups, which would enable interactions and sharing among them.

According to Trevarthen (2022, p. 29), "the earliest meanings transmitted to the baby are

‘non-verbal’ or “para-linguistic” as vocal and gestural expressions within a formal social context”. According to him, these expressions are complex rhythmic pathways happening through multimodal exchanges and vocal, facial and gestural imitations. Tests have shown that babies in the age group 2-3 months are emotionally aware of their mothers' behavior and they react to their feelings by observing their body movements.

The current study opens room for reasoning on new research in the language and intersubjectivity field. These factors have straight impact on daily pedagogical practices aimed at babies in daycare centers. It is also important taking into account that interactions are one of the guiding principles for pedagogical work organization in Early Childhood Education, as stated in the National Discipline Matrix Guidelines for Early Childhood Education (DCNEI – Resolução 05/2009).

Historically, children have been considered *infans*, meaning: those who do not speak, yet. Therefore, adults are the ones who have assessed babies and children, who have developed public policies and consolidated educational practices in institutions created for children in the age group 0 to 5 years, from the perspective set by Fúlvia Rosemberg known as ‘adult-centric’.

This ‘adult-centric’ perspective deprives children, mainly babies, of being considered complete beings, social subjects with the right to a ‘voice’. Thus, the baby not yet “is”, it must “become”, because it is seen as ‘becoming of an adult’. This negative discourse has been replaced by the one, according to which, the child and the baby are presented to a positive profile as active beings in society, as social actors. Based on what Parlato-Oliveira (2022) calls “multimodal language, a subject who interacts and communicates, who transcends the idea of language and its non-verbal use, helps giving visibility to babies’ productions.

Thus, childhood is herein understood as social *construct* undergoing continuity and transformation processes that justify the changes in the current understanding of “babies” and of their skills and habits, as well as the adopted theoretical framework, which sees babies from such perspective ((Parlato-Oliveira (2019, 2021, 2022; 2023); Trevarthen & Parlato-Oliveira (2021); Trevarthen; Aitken and Gratier (2022); Golse (2020, 2023)).

Gottlieb (2009) focused the anthropology and contemporary cultural fields to provide an overview of babies out of an analytical aspect. She stated that “we have often ignored these little creatures who seem to hold no academic promise, according to what we have defined as the ethnographic imagination” (p. 314).

Gottlieb (2009) concluded that, from a theoretical viewpoint, babies fulfil a negative space

as "non-subjects" in studies, not only in the Anthropology field, but in the Childhood Studies field as well, if Pedagogy, Sociology and Anthropology of Childhood are beared in mind.

Historically, developmental psychology has been the primary research field focused on infants. However, according to Barrière et al. (2011), initially, studies on social interactions among babies were not taken into account. Therefore, the current study seeks to help better understanding infants' place in Early Childhood Education research in Brazil by focusing interactions among them.

METHODOLOGY

Qualitative research of theoretical nature, also knoww as "State of Knowledge" study. It was conducted with babies in the age group under 18 months attending daycare centers, and aimed their interaction processes.

According to Pereira and Miclos (2013), a study is featured as qualitative depending on its flexibility and adaptability. Therefore, these studies aim at understanding the dynamic processes experienced by social groups, at describing the complexity of a given problem and analyzing the interaction between certain variables. This process allows a deeper understanding of particular behaviors shown by individuals and groups of individuals.

knowledge coming from qualitative research "is closely dependent on the [action of the] world in [individuals'] social relations, beliefs and value systems, which reflect on data gathered by the researcher and are ultimately interpreted according to its experience and philosophy" (DENZIN and LINCOLN, 2006 apud PEREIRA and MICLOS 2013, p. 17).

Chose was made to elaborate the so-called "State of Knowledge" for Qualitative Research development, which is featured as

(...) Identification, registration and categorization leading to reflection and synthesis on the scientific production of a given field, within a specific timeframe, by bringing together journals, theses, dissertations and books on a particular topic (MOROSINI; FERNANDES, 2014, p. 155).

Therefore, the 'State of Knowledge' research type addresses only one sector of publications. A 'State of the Art' research type, in its turn, encompasses broader survey of all documentation produced by a given research field up to a given point (ROMANOWSKI & ENS, 2006).

Dissertations and theses were herein used by bearing in mind that they would be better to help reaching a deeper understanding of how this knowledge field is built, given that the study deals with babies in the age group under 18 months attending a daycare centers. The research was carried out in the Brazilian Digital Library of Theses and Dissertations (BDTD/ibict) and worked with publications from the last 20 years (from 2004 to 2024). It was guided by the following questions: What is the concept of baby? How is the baby introduced? What are the discourses and practices observed in relationships between babies and adults in daycare centers? What are the theoretical references and methodologies used in the research?

The following keywords were adopted for the descriptors: "Baby" and "Daycare". The aforementioned descriptors were applied in mapping the research. In total, 352 scientific-academic productions were found, of which only 181 were considered after reading the titles. The total research considered was organized into 10 categories, namely: Babies and Language, Babies and Adaptation in Daycare, Babies and Inclusion in Daycare, Babies and Books in Daycare, Babies and Music in Daycare, Babies and Public Policies, Babies and Theater, Teaching with Babies in Daycare, Teacher Training for Babies, Babies and their Interactions with each other, with teachers, and with materials.

Considering the scope of the research and the methodological choice of "State of Knowledge," rather than "State of the Art," as already explained, the decision was made to present a portion/fraction of the total materials found, based on the selection of the category "Babies and their Interactions with each other, with teachers, and with materials."

Thus, from the 181 research studies selected and included in the ten categories described above, based on the choice of the category "Babies and their Interactions with each other, with teachers, and with materials," and after an exploratory analysis of the titles and abstracts, 17 productions (dissertations and theses) were considered and selected to compose the *corpus* of this work.

The collected data allowed selecting the following analysis categories: graduate-program fields and their research lines, program's geographical location, the timeline of the collected research, theoretical frameworks, adopted research methodologies, age of babies participating in the research, organization of spaces and materials in the babies' rooms at the daycare center.

RESULTS AND DISCUSSION

The graduate program fields enabled finding 9 graduate programs in Education, which represented 52% of the literary production in this field, and eight graduate programs in Psychology, which represented 48% of its production. Therefore, when dealing with the topic of interactions between babies in the field of early childhood education, knowledge is predominantly produced by the fields of Education and Psychology, in the following concentration areas: Education, Teaching and Formative Processes, Educational Psychology, Developmental and Learning Psychology, Health and Developmental Psychology, School Psychology and Human Development.

Reflections on Programs' concentration areas lead to Gottlieb (2009), who helps with considerations about the place of babies in research, in some study fields. She mainly assessed the anthropology and contemporary cultural studies field to provide a panorama, according to which, babies are not analytically thought of. She said that "we have often ignored these little creatures who seem to hold no academic promise according to what we have defined as the ethnographic imagination" (p. 314).

Gottlieb (2009) concluded that, from a theoretical viewpoint, babies fulfil a negative space; they are like "no-subjects" in this research. However, this scenario is not limited to Anthropology, but it is also real in the Childhood Studies field, when Pedagogy, Sociology and Anthropology of Childhood are taken into consideration. Historically, Developmental Psychology was the field mostly producing research on babies. However, according to Barrière (2011 et al.), initially, this research did not take into account studies on social interactions among babies themselves.

According to the research data, Psychology remains as prevailing field in these studies. It has changed some concepts of babies and their interactions, over time. The theoretical frameworks mostly rely on the Developmental Psychology, even when Education is taken into account.

Postgraduate programs in Education are provided by universities in several Brazilian states, among them, Minas Gerais (UFJF), São Paulo (UNICAMP; UNESP; UFSCar), Rio Grande do Sul (UFRGS), Santa Catarina (UFSC), Mato Grosso (UFMT), Campina Grande (UFCG) and Ceará (UFC). Postgraduate programs in Psychology are available in São Paulo State, mainly at University of São Paulo (USP) and at the School of Philosophy, Sciences and Letters -

Ribeirão Preto *campus*, (USP).

The first study was published in 2008, and the chosen timeframe was from 2004 to 2024. The second study was published in 2010. The following years, 2011, 2012 and 2013 recorded one study, each, on average. The year 2014 did not register any published study. There was one study published in 2015. Two studies were published in 2016. Only one study was published in 2017 and one in 2018. Two studies were published in 2019. One study was published per year from 2020 to 2024. These numbers led to the total of 17 analyzed studies.

Only 1 of the 17 studies was conducted by a self-identified male researcher; all others were developed by women. According to data collected from the early childhood education field, women prevail among authors of research carried out with children, mainly when it deals with daycare centers for babies. A similar finding was observed in the analyzed dissertations and theses. All professionals participating in the research were women working as teachers or classroom assistants for babies. Likewise, when it comes to research on interaction among babies, women are the researchers most interested in this specific research topic.

The theoretical framework by Vygotsky, Wallon, Piaget, Bruner, Winnicott and Freud is the reference for most researchers in this field. Programs in the Education field also adopt Sociology of Childhood, Early Childhood Education, the Pikler Approach, and the Philosophy of Language references from authors such as Mikhail Bakhtin, although to a lesser extent.

The methodology used in research in the two aforementioned fields, Education and Psychology, includes observation, written records, pictures, video footages and microgenetic analysis (which is more common in Postgraduate Programs in Psychology).

The age range selected for the research mainly concerned the age group from 0 to 18 months. However, according to the gathered information, most data focused on "older" babies, over 8 and 10 months old, who could sit or crawl, as well as on babies in the age group 10-12 months who could walk.

According to Shimitt (2008), babies who crawl or walk get quite close to those who have not yet developed these skills. In conclusion, from "these approaches, it was observed that the movement of one [baby] completed the lack of movement of the other [baby], even without prior intention, which makes encounters and exchanges easier" (p. 164).

"Younger" babies (from 4 to 6 months old) also participated in the research, but they accounted for less data, as the study focused "older babies," mainly interactions among them, which were enhanced by their ability to move around. "Younger" babies often stay on mats or in

strollers; therefore, they depend on adults for any interaction kind. This interaction mainly takes place during individual-care moments. Thus, according to Shimitt (2008),

Studies on young children relational skills, as indicated by the national and international literature review conducted by Amorim, Anjos, Rossetti-Ferreira, and Vasconcelos (2003) in the Psychology fields, discloses a growing interest in this topic since the 1970s, but [studies] mostly focused relationships of children in the age group 3 and 4 years old. The authors point out that the topic interactions among babies (0 to 18 months) is represented in a limited fraction of studies in this field, although there is an embryonic growth from the perspective of seeking evidence to identify interactions between young children in their first year of life. Musatti (1998) also alludes to this situation by observing that most research on interactions among young children is more frequent in the age ranges after the first year of life (p. 148).

These data corroborated findings in the present research, according to which, although the 17 selected studies regarded babies at the age group 0 to 18 months, most data focused interactions among the so-called "older babies" within the age group 18 months to 1 year, mainly due to their ability to sit and move around.

The analysis categories concerning "younger babies" include gaze, crying, babbling, laughter, movement and gesture observations. However, interactions among "younger babies" are qualified as fleeting events, although their intention has not been ruled out. There seems to be a dichotomy between theory and practice when research with babies is conducted before they reach the age of 10 to 12 months. It is important agreeing with Parlato-Oliveira (2022) when he shows "the very precocious ability of babies to manifest themselves as subject" (p. 18).

Schmitt (2008) drew attention to the difficulty faced by teachers in keeping up with these relational moments, because, according to the researcher, they take place "so quickly in the collective space of the daycare center that they are sometimes interrupted or ignored in their existence" (p. 159).

It is important highlighting the contributions by Trevarthen (2022), according to whom, babies, from birth, seek to interact through communicative exchanges. He also introduced a newborn who showed well-coordinated and rhythmic movements, including intentional fetal activities. According to Trevarthen (2022), at the age of 2 months, some babies are already very expressive and attentive, "but this behavior and ability were neglected, or even denied, by a psychology, according to which, recognition of other people required a long learning period" (p. 23).

Trevarthen (2022) showed that, based on the theory of innate intersubjectivity, babies are born with a receptive consciousness to individuals' subjective. In other words, with a

"cooperative consciousness" that seeks to interact with people.

Understanding babies' interactive and communicative possibilities requires highlighting the concepts of subjectivity and intersubjectivity. Trevarthen (2022) helped the understanding that subjectivity derives from the rudimentary individual and intentional consciousness observed in babies. Intersubjectivity, in its turn, assumes that babies adjust their own subjective control to the subjectivity of the other during this communication-interaction movement, a fact that results in coordinated acts and controlled intention.

These babies need to communicate, and it will "trigger the initial awareness of self and others, as well as the reception of intentions and emotions of intersubjective messages implicit in language" (TREVATHEN, 2022, p. 27). It is possible stating that the earliest meanings transmitted to babies are non-verbal. Thus, they stem from the use of multimodal language.

According to Parlato-Oliveira, babies interact and communicate by using a "multimodal language" that transcends the idea of language and its non-verbal use. This process helps giving visibility to babies' productions.

Trevarthen (2022) further showed that "the baby's ability to appreciate and will to talk to a parent can be recognized, and therefore, lead to a response from any other person. Including another baby at the same age" (p. 35).

Therefore, it is necessary taking into consideration these new findings in research about interactions among babies, from both intrauterine life and birth. It is also important observing their intrauterine life, so that babies' skills can be better understood. From this perspective, it is not necessary waiting for babies to grow up in order to consider their interactive possibilities through learning. This outcome emerged from the collected data. More visibility is given to "older babies" (from 8/10 to 12 months) in research in the interaction field, mainly in the Early Childhood Education field.

Thus, Grana's (2011) analytical categories enabled assessing how "older babies" are seen regarding their actions in research about peer interactions, starting from the age group (8/10/12 months). These actions include inviting behavior (used to attract another child's attention and to keep this child's attention), contentment behavior (actions highlighting joy, happiness and enthusiasm; provoked by, or in response to) due to the actions of other children, observational behavior (showing that the baby observes the actions of another child or of a group of children), discontented behavior, collaborative behavior (actions contributing to the action and/or play of another), imitative behavior, behavior of competing for toys/objects, assertive behavior (actions

or behaviors showing the child imposing its will on others) and compassionate behaviors (highlighting sensitivity to the suffering of others and efforts to alleviate it) (GRANA, 2011, p. 120).

Schmitt (2008) concluded that, in the group of babies observed in his research,

(...) the relationships between babies change considerably from the moment they gain control of their bodies and movement. It does not mean that children do not establish relationships before this mastery, as they are actively involved from an early age, even if to a minimal degree, listening and observing situations with a certain liveliness. However, I observed that as the group of babies gained more control of their bodies, the situations of encounter and interaction between the little ones increased. These domains – crawling, creeping, sitting, and walking – allowed the babies to reach out to each other without depending on the initiative of professional adults (p. 162).

Research highlights the relevance of organizing the environment based on using materials, as it encourages interactions among babies and between babies and their environment. The study publically revealed that preschool teachers follow few practices to organize the environment for babies. In other words, the intentional organization of the environment and materials is not often observed in their daily routines. This component was considered essential to trigger interactions among babies.

In addition to materials, it is essential mentioning the relevance of spaces that allow babies, mainly those who are not yet mobile, to see the room, the materials, the other babies and the adults. This is how they can get closer to each other, even when they are put on mats and supported by cushions.

Grana (2011) cited several studies, including those by Campos de Carvalho, Padovani, and Pereira (2000) and Meneghini and Campos de Carvalho (2003), which provided on the occurrence of preferential interactions and on increase in their frequency depending on the organization of the physical environment. Based on the conducted research, it is possible adding results to support these data, such as those by Birschal (2010), Grana (2011), Fochi (2013), Máximo (2018), Silva (2019), Sousa (2019), and Clarindo (2024).

According to Máximo (2018),

Through interactions and the experience of different opportunities provided by adult attention to spatial arrangements, selection and offering of materials, and intervention based on observation of babies' actions, they had the opportunity to make choices, chart the course of interactive processes, develop communicative skills and social relationships, advance in ways of playing and moving, and, more than that, they were able to leave marks of their presence in the nursery (p. 139).

They highlighted the difficulty faced by public daycare centers in providing specific toys and materials. This fact draws attention to the need of public policies focused on providing the necessary resources for daily pedagogical work in daycare centers.

On the other hand, emphasis was given on interactions experienced by babies through objects, rather than on the baby-to-baby or baby-to-adult relationships. The hypothesis raised from this assumption stated that - despite considering the language of babies in all the analyzed research that has introduced a baby who communicates through gaze, gestures, babbling, crying, body language, among others - the emphasis on the baby-object relationship may still highlight a view that expects other communication modes closer to verbal speech. The research started from the premise that babies start from exploring objects, alone, but they also seek interactions with other babies through sharing and exchanging objects.

The data also point out a contradiction between the concept of baby adopted in up-to-date theories (which see the baby as active subject) and crystallized practices based on the view of a passive baby, from an 'adult-centric' perspective. It is crucial reasoning on the need of initial and continuing training for preschool teachers to disrupt crystallized practices that insist on the understanding of passive babies, of the sense of 'yet to become'.

Thus, according to Gigioli (2021), there is a system where

(...) The text presents undergraduate courses in Pedagogy, which are increasingly insufficient to train teachers who can work in Early Childhood Education, Elementary Education and school management. In a study, Pimenta et al (2017) concluded that, in São Paulo State, the pedagogues training is, for the most part, weak, superficial, fragmented and dispersed. This system ignores the relevance of subjects focused on Early Childhood Education, as pointed out by Gatti (2009). This system does not require educators in daycare centers to have a degree in Pedagogy or is not concerned with their continuing education (p. 161).

The National Discipline Matrix Guidelines for the Pedagogy Course (Resolution 05/2005) themselves draw attention to learning in this age group (from 0 to 5 years) as it differs from that of children in the age group 6 to 10 years. They pointed out, according to studies, lack of knowledge on these particularities, among others. This fact has generated inappropriate procedures that even violate the languages and needs of children in Early Childhood Education, mainly of babies. Therefore, "the primary requirement for the Pedagogy course is to assess how to carry out pedagogical work for Early Childhood Education based on the understanding that children are producers of culture within a culture, which breaks with the view of child as a 'becoming'" (BRASIL, 2005, p. 13).

Historically, it is known that children have been considered *infans*, i.e., those who do not speak, yet. Therefore, from the perspective by Fúlvia Rosemberg of 'adult-centric', adults are those who substantiate what has been assessed about babies and children, as well as who issued the developed public policies and educational practices in place in institutions set for individuals in the age group 0 to 5 years.

The adult-centric view deprives children, mainly babies, of being considered complete beings, social subjects with the right to a 'voice'. From this perspective, babies 'are not', yet; they need to "become".

The negative discourse has been replaced by another, according to which, children and babies are positively seen as active members of society; in other words, as social actors. Childhood is herein understood as social *construct* undergoing continuity and transformation processes. This view justifies changes in the understanding of babies and of their skills and abilities. It also justifies the adopted theoretical framework, which perceives babies from this perspective ((Parlato-Oliveira (2019, 2021, 2022, 2023); Trevarthen & Parlato-Oliveira (2021); Trevarthen; Aitken and Gratier (2022); Golse (2020, 2023)).

These new studies on babies need to be included in undergraduate courses for preschool teachers' initial training, as well as in continuing education courses for those who already work with babies. This action aims a Pedagogy of Childhood that truly takes babies into account, their knowledge and abilities from birth, since such abilities are often rendered unfeasible by the relationships and interactions established between adults and babies.

Golse (2023) reflected on the baby and the mother, and it also broadened the reflection towards other adults, including preschool teachers. Such reflection started from an assumption that everyone has already seen or heard of, namely: babies' "angel-like" smile. According to Golse (2023), the "angel-like" smile does not target anyone. The big question lies on the possibility of this "angel-like" smile turning into a "response-smile"; in other words, from a signal to a sign.

This crossing can only happen through the other. Therefore, Golse (2023) stated: "it is the mother's work of interpretation that, one day (why at this day?), she will think: 'today he is smiling at me'". According to Golse (2023), this episode could be an "anticipatory illusion" or a "creative anticipation". However, he stated that it does not matter, because what really matters is that, at this day, this mother anticipated her baby as subject. He stressed that signs' semiotization can only pass through the other, through the object.

Thinking about preschool teachers and about the other adults who care for babies, requires reflecting on the relevance of reciprocal eye contact, of a smile in response to it and of presenting a communication that recognizes a baby's eager for interaction. How do we look at the baby? How do we respond to its needs? How do we touch it? How do we smile at it? How do we talk to it? What do we hear from it?

Another aspect to be considered emerged from the selected research data, namely: the number of babies in comparison to the number of adults in the room (from 18 to 20 babies, on average). Therefore, most of the time, adults are involved in activities such as changing diapers, bathing and feeding the babies. This routine makes it impossible for them to be present with the babies all the time, and to observe and attentively follow their actions. Their attention is always divided between one task or another with one baby and the attention not given to the others. Broadly speaking, this process is featured by moments of absence, despite adults physical presence in the room.

Discussion about neural cells called 'mirror neurons' were also observed, as well as the concept of mimesis. Current scientific discoveries that have taken into consideration the contributions by Nagy and Molnarb (2013) introduced an important change in the previously existing understanding of the infant mimicking issue as cognitive process only appearing at the end of the first year of life.

According to Nagy and Molnarb (2013), studies have shown that newborns are not only capable of mimicking, but also of teasing others on their own initiative to start protruding their tongue seeking a response from the other.

The researchers also pointed out that the tongue protrusion movement, as mimicking and initiation gesture, was followed by different heartbeat patterns. Babies heartbeat is preceded by its deceleration during the teasing action. There is heart rate increase before and during the response to the mimicking (Nagy e Molnarb, 2023).

Mimicking, in fact, can be seen as part of the communicative and interactional process, as previously discussed on intersubjectivity through "protoconversation." According to Nagy and Molnarb (2013, p. 60), "neonatal mimicking is one of the complex social skills forming an innate intersubjectivity".

FINAL CONSIDERATIONS

The present study sought to better understand babies' place in Early Childhood Education research in Brazil based on studies about interactions among babies. Clearly, although babies in the age group 4 months also participated in the research, they did not show up much in the collected data. This finding confirmed the need of broadening research focused on the so-called "younger" babies (under the age of 6 months) as protagonists in these studies because "we now know that the self-generated human awareness of movement and its adaptation to interpersonal engagement begins in the fetal stages" (TREVARTHEN & DELAFIELD-BULT, 2013 apud TREVARTHEN, 2021, p. 236).

Trevarthen (2021, p. 249) showed that "as the baby develops new conscious movement powers, from the age of 3 months onwards, with more efficient control of the head and eyes to see and hear, of extending arms and hands, a more imaginative and creative attention is given to the world".

It is also essential highlighting the necessary expansion of methodological possibilities in research with infants. As earlier introduced, although research uses filme footages as resource, as well as microgenetic analysis, in some cases, infants considered "younger babies" (from 4 to months) still get visibility in these studies, because these "older babies" already sit, crawl, walk or verbalize some words.

Trevarthen (2022) presented some research involving longitudinal studies applied to video footages that have shown motivational transformations in babies up to the age of 6 months. These transformations became increasingly complex, accurate and selective.

The shift in methodologies used to learn about babies can be traced back to the contributions by Parlato-Oliveira (2022b), who stated that we have moved from observation to footages and from there, to what we now call eye-tracking, which allows us to track a baby's gaze direction and duration based on eye movements. This technology allows research with newborn babies. However, it is also important mentioning research conducted with fetuses in intrauterine life.

Therefore, this is a developing field within the Humanities area, mainly in the Early Childhood Education field. The collected data are in compliance with similar conclusions by Grana (2011), according to whom, the growing interest in this recent decades is real. According to Freire (2006), it is still necessary pointing out that, based on a study substantiated by a survey

of academic productions on daycare centers at USP and UNICAMP, between 1995 and 2005, “there is still a small number of studies on child-child interaction in comparison to other investigated topics such as discipline matrix, symbolic play, the early childhood educator, the child-adult relationship, among others” (GRANA, 2011, p. 32).

Therefore, it is necessary connecting existing research, current studies on babies and the daily practices developed in daycare centers to achieve a more attentive and active listening by professionals when it comes to interactions among babies and the meanings built from the relationships set between babies and their peers.

REFERENCES

BARRIÈRE, M; STAMBAK, M; BONICA, L; MAISONNET, R; MUSATTI, T; RAYNA, S; VERBA, M. **Os bebês entre eles: descobrir, brincar e inventar juntos**. Campinas (SP): Autores Associados, 2011.

BIRSCHAL, P. de S. **Exploração lúdica e afetividade em crianças de creche**. Tese de Doutorado. Universidade de São Paulo. 2010.

BRASIL. Ministério da Educação. Secretaria de Educação Básica. **Diretrizes Curriculares Nacionais para a Educação Infantil**. Brasília: Resolução CNE/CEB, nº 5/2009.

CLARINDO, J. M. **O brincar na creche sob o ponto de vista dos bebês**. Dissertação de Mestrado. UFC. 2024.

GIGIOLI, M. E. N. **Brincando e interagindo na educação infantil: experiências de bebês no cotidiano de práticas educativas**. Tese de Doutorado. Universidade Federal de São Carlos. 2021.

GOLSE, B. **Do sentimento de se ao sentimento de existir**. São Paulo: Instituto Langage, 2023.

GOTTLIEB, A. Para onde foram os bebês? Em busca de uma Antropologia de bebês (e de seus cuidadores). **Psicol. USP [online]**, v. 20, n. 3, p. 313-336, 2009.

GRANA, K. M. **Um estudo exploratório: interação socioafetiva entre bebês**. Dissertação de Mestrado. Universidade Estadual de Campinas. 2011.

MÁXIMO, L. P. **Ações dos bebês em diferentes formas de organização do espaço e dos materiais em um ambiente de creche**. Dissertação de Mestrado, Universidade Estadual Paulista. 2018.

MOROSINI, M. C., & FERNANDES, C. M. B. Estado do Conhecimento: conceitos, finalidades e interlocuções. **Educação Por Escrito**, 5(2), 154–164. 2014.

NAGY, E. & MOLNARB, P. *Homo imitans ou homo provocans?* Modelo de *imprinting* a partir

da imitação neonatal. In: BUSNEL, M. C. & MELGAÇO, R. G. (orgs). **O bebê e as palavras: uma visão transdisciplinar sobre o bebê**. São Paulo: Instituto Langage, 2013.

PARLATO-OLIVEIRA, E. **Saberes do bebê**. São Paulo: Editora Langage, 2022^a.

_____. **O bebê e as tramas da linguagem**. São Paulo: Instituto Langage, 2022^b.

PEREIRA, K. R., & MICLOS, P. V. (2013). Pesquisa quantitativa e qualitativa: a integração do conhecimento científico. **Sau. & Transf. Soc.**, ISSN 2178-7085, Florianópolis, v. 4, n. 1, p. 16-18. 2013.

ROMANOWSKI, J. P.; ENS, R. T. As pesquisas denominadas do tipo “estado da arte” em educação. **Diálogo Educ.**, Curitiba, v.6, n.19, p.36-50, set./dez. 2006.

SHIMITT, R. V. **Mas eu não falo a língua deles!: as relações sociais de bebês num contexto de educação infantil**. Dissertação de Mestrado. Universidade Federal de Santa Catarina. 2008.

SILVA, S. de C. S. da. **A dimensão estética da experiência na educação infantil: uma proposta de instalação artística**. Dissertação de Mestrado. Universidade Federal de Mato Grosso. 2019.

SOUSA, E. T. de. **As interações dos bebês na creche: o que eles fazem e dizem?** Dissertação de Mestrado. Universidade Federal de Campina Grande. 2019.

TREVARTHEN, C. A Psicobiologia da ação e a experiência compartilhada desde o nascimento. In: TTEVARTHE, C. & PARLATO-OLIVEIRA, E. (orgs). **Bebê, corpo e ação**. São Paulo: Instituto Langage, 2021. p. 233-260.

TREVARTHEN, C; AITKEN, K. J; MAIA, G. **O bebê nosso professor**. São Paulo: Instituto Langage, 2022.