

Baby crying and its role in the language acquisition / *Choro de bebê e sua função na aquisição de linguagem*

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ABSTRACT

The objective of this work is to identify, based on the collection of crying data from babies in their incipient phase of development (very early childhood), language patterns. This data was collected in the form of videos available on YouTube. This article represents the result of the analysis of part of that study, which was guided by the assumptions of Tomasello (2003) in his approach to human development and language acquisition. According to this author, human knowledge is not only a genetic fruit that has been propagated throughout the time of development (ontogenic), but it also reverberates, in its essence, cultural marks (phylogeny). We will also discuss with Vygotsky (2000 [1934]), among other relevant authors, regarding the role of language and the historical-social process in the development of the individual. According to this Russian author, the acquisition of knowledge occurs through the interaction of the subject with the environment, as it is in the exchange with other subjects that knowledge and social functions are assimilated. Since language is an integral part of everyday life in which we transmit desires and needs, thoughts, concerns and plans (Clark, 2009), we bring to the table Damásio (2009) and Ekman (2011) to deal with the possible implication of feelings and emotions. For this work, we cut out two language patterns represented in the baby's crying.

KEYWORDS: Baby cry; Communicative patterns; Language acquisition.

RESUMO

O objetivo deste trabalho é identificar, a partir de coleta de dados de choro de bebês¹ em sua fase incipiente de desenvolvimento (primeiríssima infância), padrões de linguagem. Esses dados foram recolhidos em forma de vídeos disponíveis no Youtube. Este artigo representa o resultado da análise de parte daquele estudo, que se orientou pelos pressupostos de Tomasello (2003) na abordagem sobre o desenvolvimento humano e a aquisição da linguagem. Segundo esse autor, o conhecimento humano não é apenas um fruto genético que foi se propagando ao longo do tempo de desenvolvimento (ontogênico), mas também reverbera, em sua essência, marcas culturais (filogenia). Dialogaremos também com Vygotsky (2000 [1934]), dentre outros relevantes autores, no que tange o papel da linguagem e do processo histórico-social no desenvolvimento do indivíduo. Segundo esse autor russo, a aquisição de conhecimentos se dá pela interação do sujeito com o meio, pois é na troca com outros sujeitos que o conhecimento e as funções sociais são assimilados. Sendo a linguagem parte integrante da vida cotidiana em que transmitimos desejos e necessidades, pensamentos, preocupações e planos (Clark, 2009), chamamos à baila Damásio (2009) e Ekman (2011) para lidar com a possível implicação de sentimentos e de emoções. Para este trabalho, recortamos dois padrões de linguagem representados no choro do bebê.

PALAVRAS-CHAVE: Choro de bebê; Padrões comunicativos; Aquisição da linguagem.

1 Introduction

In their very early infancy, infants utilize various forms of pre-language, manifested through emotion, including crying, gestures, babbling, and smiling, to establish their relationships with their peers in their first months of life. All these forms of pre-language serve as initial prerequisites for the materialization of language and, consequently, of the first language. Furthermore, this period marks the stage in which children undergo cognitive and intellectual development, on the verge of acquainting themselves with and learning their first language. For this study, we have isolated two crying patterns as objects of reflection.

¹ Although it is a research that takes as its starting point *corpus* containing human beings in their infancy, the data composing the samples were downloaded from materials available on internet websites. In such cases, by indicating the source, scientific productions are exempt from submitting the Project for review by the Ethics Committee (cf. Plataforma Brasil).

Children generally progress through the same developmental stages proposed by Vygotsky (2000 [1934]); however, these stages are not rigid, explaining why some children may walk or speak earlier or later than others:

(...) in the initial stage of a child's development, we could undoubtedly observe the existence of a pre-intellectual stage in the process of formation of language and a pre-language stage in the development of thought. Thought and word are not initially linked by a primary bond. This connection emerges, changes, and expands in the process of the development of both thought and word. (Vygotsky, 2000 [1934], p.396).

In this initial phase of development, the infant lacks the maturity to perceive the relationship between language and thought due to their rudimentary cognitive capacity. However, this capacity will gradually manifest over time, as their development is gradually influenced by everyday experiences, leading to changes that will eventually establish and improve this relationship.

It is well-known that Piagetian studies (Piaget, 1970) broaden the concept of pre-intellectualism, as the sensorimotor stage should be considered the first stage of development, marking the emergence of perceptual complexity and motor skills in infants' development. This phase is characterized by a period in which verbal intelligence rests upon practical intelligence, also referred to by the researcher as sensorimotor intelligence. During this initial stage of cognitive development, infants (up to 18 months) and young children acquire knowledge through sensory experiences and object manipulation. According to the same author, this corresponds to the period from 0 to 2 years, precisely when the infant explores the world through their movements and sensations.

Hence, we inquire: what functions do infant crying patterns serve in the early stages of their development? We will address this question based on two crying patterns extracted from a set of patterns described from a corpus of videos collected on YouTube. A more precise cutout will allow us to demonstrate the properties, traits, and functions of two of these incipient language patterns.

2 Theoretical Review: The Relationship Between Emotion and Infant Crying

Complex social interactions produce subjective experiences in individuals, which can cause significant neurobiological changes. Evidently, these changes may vary in intensity, as they are associated with temperament, personality, and motivations. According to Vicente (2014, p.

229), moments of tension bring forth emotions that alter behavioral patterns. The researcher, on that occasion, utilized the situation of university entrance exams with pre-entry students:

(...) university entrance exam is situation of tension and basic emotions experienced by the species, which are encoded in the brain. As a result of this context, originate from commands in this region biophysical responses such as sweating, hand pain, and forgetfulness. Especially regarding forgetfulness, 'the famous blanks,' we have an example of a biophysical response that allows us to conclude that **emotions interfere with language**. [emphasis added]

It is possible to notice how each individual is impacted by emotion differently. The same is true with infants, whose emotions elicit various crying patterns, even in similar contexts of tension. The emotion manifested through crying in early infancy reflects a way for the brain to communicate the exit of a neural association. According to Meyer (2002 [1997]:13), this symbiosis between visceral life and experienced inputs tends to prompt reactions of "noble" functions:

the cerebral matter [...] elaborates the entirety of brain activity, not only the controls that the brain-machine exercises over visceral life but also the noblest functions, which include consciousness, thought, emotion, and perception.

These activities generate specific commands in the human brain that are capable of altering actions and intentions driven by emotion. Vygotsky (2000 [1934]) conceives the need to study the dialectics linked to biological and sociocultural factors involving emotion. According to him, mental functions (cognitive processing) arise from brain activities, but this birth is concretized by a relationship that is in constant motion with the individuals of a society and the members of a socioculture.

Vygotsky (2000 [1934]) indicates that, primarily, babies, when they are born, establish a direct relationship with the world for various reasons, whether through automatic actions or through objective associations between simple events. He further admits that this initial phase coincides with psychic functions observed in some animal behaviors, and through these functions, the first experiences are constructed, which will contribute to conditioning biological factors for later experiences.

In open dialogue with this author is Wallon (1942), especially when he reveals that there is a fundamental role of social interaction in the child's developmental process. Both authors affirm that it is through contact with members of the same culture and social group that babies gradually mold themselves into "historical-subjects." We can infer that it is under these conditions that the individual ceases to be merely a biological subject and becomes also a historical-subject because

the interaction with peers will be direct and gradual. It is upon this developmental machinery that Freitas-Magalhães (2011, p. 59) argues:

If babies don't speak, communication occurs through facial expressions, and the recognition of basic emotions, for example, lies within neural systems. Selective adaptation and gradual development of brain structures can be observed. Just a few months old, a baby can distinguish types of expression (e.g., joy, fear). It is the neural systems that mediate recognition and learning. Babies demonstrate excellent sensitivity to smiling, as evidenced by the relationship they establish with their parents.

In other words, the idea is consolidated that children, in their early stages, can connect with the environment through certain instruments that assist them in communication at a given moment. Let's consider, for example, the scene where, at exactly 5 months of age, a baby cries when the caregiver takes the rattle out of their hands. In the reverse action of returning the toy to the baby, the crying ceases. This example allows us to reflect on how the baby reacts to certain key situations that signal some point of tension (emotional). We are talking about objects, the baby, but primarily about the language acquisition process.

Thus, when a baby uses language in their interaction with others, they can control the environment and establish contact in different ways while organizing their intellectual behavior (cf. Vygotsky, id.ib.). There is a convergence here with Wallon's (1942) thinking, which advocates for the development of the mind as a continuous and social process guided by emotion, which can be fragmented into two stages: the first, impulsive and emotional (zero to one year); and the second, sensory-motor and projection stages (one to three years). The first phase, the focus of this work, begins with reflex activities, impulsive movements (convulsions, amygdala ruptures, screams, and cries), integrity, and lack of coordination. The second phase is characterized by speech marked by inquiries and arguments, following syntactic constructions properly structured and with more complete meanings.

The entire maturation of external tactile sensory systems (touch), along with the baby's experiences, will gradually differentiate these systems, transforming the purely physiological response from evolution to the psychological and conscious. Because of this interaction with the social environment, the impulsive movement provoked by happiness and discomfort gains expressive strength (via emotion), thus establishing a mutual interactive circuit between the baby and their people:

their main motor manifestations will consist of an expressive organization of the same initial motor discharges (gestures, mimics, and attitudes) that will provoke reactions in their interlocutors and will be modified by these reactions. This process triggers a kind of consciousness that deals with the organic modifications that condition it and that seem to transform it into its *raison d'être* (Wallon, 1942, p. 62).

Each baby or child, in their initial processes, will not act rationally or intentionally but egocentrically (Wallon, 1942), and this shows the complex composition of language in the mind. When a baby throws a tantrum and parents don't understand, self-control may manifest, and this result will be motivated, according to the author, by a common bodily reaction. Interactive success will be compromised in a moment of extreme emotion, as, as a reflex of the natural human process, the baby will not "listen," and their body and mind will remain endowed with emotion.

As we have argued, emotion is not limited to communication. It is one of its guidelines, as it can be used to overcome periods of affective dependency. This period was identified and verified in 2015 by the Massachusetts Institute of Technology (MIT), in a magnetic resonance imaging, where the baby's brain was visualized with marks of oxytocin, which is a hormone released when experiencing a moment of care and affection.

It is important to emphasize that emotion is like water for humans, it is a principle of survival. It is the means through which babies and children, not exclusively, find the space of comfort to meet their basic vital needs because, during this period, crying can have the semantic representation of various meanings: hunger, discomfort due to wetness, colic, sleepiness, tantrum, irritation, absence, or even fright. Thus, the different "types of crying" with gestures lead us to a meaning and an apparent sense for the people who are close. These repeated episodes will become motifs for a baby's communication process.

Though from a different perspective, Clark (2009) reinforces what the previously mentioned authors echoed: the early stages of a child are guided by the emotions experienced by them and their social groups. The language acquisition studies conducted by the author show how children behave in materializing language through crying and gesture, and these findings demonstrate the importance of studying these behaviors for significant advancements in language studies. In this sense, corporeality gains relevance for the understanding of these same emotions. This is what Ekman (2011) reveals with his study.

According to the author, emotions are cultural processes that have evolved over time, and they can be categorized as positive and negative, but this division is not stable among individuals.

Ekman (2011, p.16) emphasizes that "we organize our lives to maximize the experience of positive emotions and minimize negative ones." Unlike positive emotions, negative ones are associated with unpleasant emotions, also being responsible for generating emotions that aid in defense mechanisms and coping with danger. In line with this idea, Freitas-Magalhães (2011) highlights the existence of two facial expressions: true and false. The former are responsible for appropriate facial expressions of suffering/pain, meaning the relationship between gestures, emitted expressions, and the intensity of crying linked to genuine feelings. On the other hand, false emotions exhibit a mismatch between the tone of crying, gestures, and facial expressions, indicating that false emotions carry embedded in their signs some identifiable behavioral cues, such as fear and sadness (the absence of forehead muscle movements), joy (lack of involvement of eye muscles).

We can thus conclude that a baby's cry is the most important form of communication after birth, and in this regard, we agree with Silva (2011, p. 20) when stating that "crying and screaming are the first manifestations of emotion found in human life, thus constituting the primary mode of communication and the means by which they express their needs." This justifies the prioritization of this theme in the work we are presenting.

3 Methodology

Longitudinal studies allow for an approach to individual transitions and the cumulative effects of life cycle transitions. From this perspective, cultural differences and changes are envisaged as a research method, as variations in the characteristics of the same sample elements over a certain period point to dynamics that favor the establishment of parallels between individuals and between different moments of an ontogenetic developmental phase.

We adopted the orientation of longitudinal studies because, according to Diggle et al. (2002), they provide information on global and individual variations over time. Known as "repetition measures" or "situations," through studies of this nature, it is possible to perceive effective criteria for answering questions that arising from dynamic developmental processes while, at the same time, nurturing understanding about the diversity of subjects and results with milestones scaled globally or individually, and also segmented by interest in short or long-term follow-up of the object under investigation.

This was the path we identified as promising at a time when we were experiencing social isolation due to the Covid-19 pandemic. Access to real data available via the internet on the

YouTube platform facilitated our ability to scale the data, in the analysis process, and establish secure criteria to homogenize the different samples. This selection was based on evidence of cries emitted in situations where parents and children interacted with emotion and intentionality. Once collected, we began categorizing the data so that we could identify possible patterns, which were then compared in their contextual differences. In the next section, we will present the data analysis procedures.

4 Crying as a Noble Object of Investigation

Since early stages, the brain develops and creates complex cognitive structures capable of guiding even babies still in brain formation, and this effect continues to perpetuate itself in current emotional relationships.

It is a fact that with the advancement of human beings and its civilizations, emotion has managed to gain body and strength over the years. The more an individual is influenced by emotion, the closer they come to emotional decisions, and consequently, thoughtless and unforeseen ones; on the other hand, the less the individual is influenced by emotion, the greater their power of rational decision-making.

The historicity and chronology of emotions constitute simultaneous elements to the most tender phylogenetic moment and accompany us viscerally in reading what we feel and intuit what others feel, as demonstrated by Ekman (2011). In the field of neuroscience, it is believed that several areas converge with the area of emotion and that, throughout human evolution itself, cognitive domains were responsible for accurately processing the information received by the ancient mind and propagating to this day what we know and how we intuit to know. Damásio (2009, p.12) reinforces this argument, emphasizing the importance of evolution by assuming that "without the revolutionary emergence of emotion, there would be no one to notice it; consequently, there would be no history that beings made over the ages through emotion."

With consensus on this strong argument that also represents the evolution in the way emotion is thought, we will turn to the most recent research that concerns how "mental/brain events are [...] products of a long history of biological evolution, it makes sense to include evolutionary evidence in this examination" (Damásio, 2009, p.257). After much resistance and lag in studies, emotion has ceased to be considered inconvenient and today contributes to the understanding of

what we are from the most incipient stages of our development, in cognitive action tendencies, subjective thoughts, and physiological reactions.

In tune with these evolutions of scientific thought, encompassing in this framework the prioritization of objects previously considered less "noble," as well as the methods available for a new perspective, this research makes a contribution that enriches the discussions on the communicative process of emotion in the very early childhood phase.

As an essential element, we take a step towards understanding the pre-verbal stages of language acquisition, situated at a moment when the focus is on responses of the autonomic nervous system and some of its functionalities in the brain and interaction. Emotions are currently considered the central element of life and human experience, and the world is increasingly concerned with the appreciation of emotional balance, as evidenced by the various programs being marketed and the ever-growing number of self-help books being published. This, coupled with the context in which we conduct the research, a context of profound psychological suffering and social isolation, which seriously impacts emotion. Despite this relevance in adult life, we choose to study emotion as a means to understand the behavior and functions of the infant phase as a first moment of the birth of a cipher language with embodied emotion.

The emotions of sadness, anger, stress, fright, fear, anxiety, and disappointment affect the maternal central nervous system (autonomic), according to Damásio (2009), impacting the mother through certain chemicals (called adrenaline), which are released into the bloodstream and cross the placenta, altering the fetus's biochemistry at that time. In the very early childhood phase, in particular, emotions are part of the baby's social life, as they are apparent in their relationships. However, the life of the fetus and its "emotive" relationships influence social formation and future decision-making.

The machinery of emotion located in the nuclei of the periaqueductal gray matter likely directly and indirectly influences the processing of body signals at the level of the parabrachial nucleus. It is not precisely known what, in neural terms, is added in this process, but this addition likely contributes to the experiential quality of feelings (Damásio, 2009, p.71).

Furthermore, emotion can influence work relationships, play, friendships, dialogues with family members, social communications, and intrinsic relationships. Moreover, it can cause harm, lead to deaths, make certain attitudes be seen appropriately, such as taking something to the

extreme causing remorse or regret, as Ekman (2011) asserts. The effects are thus devastating in social terms.

Each emotion triggers a mental switch in the human brain according to its needs and intentions, a trigger that alters one's behavior, way of looking at the world and people, as well as one's manner of babbling and even physical and gestural behavior. Thus, bodily expression is a coordinated and specific response to a behavior that needs to be reverberated at a particular moment and context (cf. Freitas-Magalhães, 2011).

Ekman (2011) made a powerful contribution by identifying elements that coalesce in the communicative instance of emotions: the discovery of over 10,000 facial expressions. Some of these may be universal, but what is most relevant is noting that the demarcation of the face in strategic points can configure a pattern of emotion. Despite the complex mechanism that acts within the brain to send messages corresponding to emotions, "the function of the nervous system is to control movement and facial expressions. Muscles and muscle cells are the effectors of the motor system" (Amthor, 2017, p. 135). In this sense, for neuroscience purposes, muscle cells are similar to neurons, as they have specialized receptors and produce action potentials.

This iconicity between the external world (physical exercise of emotion) and the internal world (brain processing) is exemplified by the fact that most internal body movements do not reach the level of consciousness. No matter how hard we try to control, it will not be possible. This reality becomes clear both when an adult moves their eyelashes without any control over the speed of execution, and when we realize that heartbeats follow rhythms governed by something beyond volition.

Next, an image of a 4-month-old baby in a context of hunger is presented. The emotion "discharged by the brain" highlights gesture as essential for the combination and understanding of crying.

Image 01 – Baby A at 04 months old crying with hunger



Source: Teobaldo (2021)

Studies have shown that when newborns or infants in their early months of life are hungry, their hands close and lock. Once the hunger is satisfied, the hands begin to slowly relax and instantly open. The opening of the hands provides us with a meaningful description of alleviating the "pain" that hunger was causing. The same can be applied to facial expressions:

The human face is the most visible part of the body throughout life. Hence, its unequivocal importance in the psychosocial development of the individual. It is also a complex and multidimensional system that has been the subject of extensive and diverse studies over the years (Freitas-Magalhães, 2011, p. 27).

Emotion and its refinement in communication can occur in short periods, but for this to happen, it is relevant to know the history of each emotion and what each one means. The baby in the previous scene evokes with its gestures and facial expressions an essentially communicative process. Following this same dynamic, we analyzed each selected video, collecting from them the key elements of corporeality and context. Through this selection, it was possible to identify some characteristics associated with hunger. The results of the video analysis led us to the following pattern:

Cutout I	Left hand closed being brought to the mouth, shortly after, the same hand, in the same manner remaining in the mouth, with the sucking sound made when being fed
Cutout II	Eyes frowning closed without tears
Cutout III	Frown face shape
Cutout IV	Right cheek activated upward
Cutout V	Low eyebrows
Cutout VI	Tongue at rest
Cutout VII	Arms contracting towards the body

Frame 1: Standardized elements of hunger cries

These signs that characterize the scene of crying for those without experience with babies are traits found as early as 2 months of age and signal an urgent need. Additionally, it is necessary to consider that the factor of "time" plays a strong supporting role in the scene, meaning that the sound of crying typically appears, on average, between 150 to 180 minutes at any time of the day, up to 5 months of age. From 6 months of age, with the introduction of foods, this same sound repeats in longer intervals – that is, between 240 to 300 minutes.

In the same vein as emotion, a second recording of a baby's cry allows for reflection on their reaction and externalization in response to hunger cries. By capturing three images at distinct moments, the baby's bodily configuration becomes apparent. From these images, it is possible to extract some elements that resemble those observed in the analysis of hunger cries initially.

Image 02: Baby at 02 months old crying from hunger



Source: Teobaldo (2021)

In Image 02, the baby appears configuring some movements that were not described in relation to Image 01.

Cutout I	Tongue position varies from bottom to top
Cutout II	Hands half-open, with only the thumb and index finger of the left hand closed, seen in frames "A" and "C"
Cutout III	Eyes opening alternating sequentially

Frame 2: Patterns in different cutouts

Comparing this configuration with the one shown in Image 03, shown below, we soon notice a certain communicative diversity:

Cutout I	Hand raised to the mouth
Cutout II	Activated cheeks
Cutout III	Eyes closed at a certain moment Eyes frowning without tears

Cutout IV	Open mouth in suction format
Cutout V	Arms contracting toward the body

Frame 3: Communicative diversity

Frames "B" and "C," respectively, reveal different forms of gestures, which are used during crying moments. Random gestures manifest in both videos analyzed thus far; however, the gestures and cries, no matter how prolonged, lead to a common gesture in the end: the hand over the mouth, as a typical behavior for babies to indicate hunger.

Each gesture is part of a context, as mentioned earlier, and this needs to be taken into consideration and carefully analyzed. Obviously, the images provided here represent fragments of scenes frozen by the selected excerpts we intend to emphasize in this presentation. We know that there are many varied paths taken by emotion, and furthermore, there are many ways language materializes. Other cases we have analyzed have been drawn from this reflection, but they can greatly aid in understanding pre-verbal patterns of babies. They are not random, and not only the mother is capable of understanding them. They are apparent monads that are constructed for an end in themselves (to manifest corporeality), for an end in the object of desire/need (to manifest physiology), and for an end in the movement that will give to other bodies (pre-verbal communication). Beyond all of this, it also signals an initial point of self-construction in the world of language. It's a strategy to emote, to move, and to move towards the world with the aim of communicating, and crying is this crucial tool for the next step in its socio-emotional integration.

Conclusion

We initiated the study path of pre-verbal language by demonstrating its importance as a fundamental step towards more complex language in human ontogeny. We focused our demonstration on crying and the traces of corporeality, physiological elements, and communicative movements that characterize one of the earliest phases of human development.

Having analyzed these elements, we arrived at patterns exemplified here through two cases of "crying". The identified patterns allowed us to verify that each baby presents general characteristics, as well as specific ones. However, these characteristics are key points in demonstrating how each baby reacts through crying to needs identified as hunger, discomfort/wetness, sleepiness, fear, and absence. In the general characteristics, we could list: intense movement with hands and arms, always bringing or moving towards the body, sucking

sound with hands in the mouth, closed or semi-closed hands, mouth in a circular shape while yawning. These characteristics can be grouped following the following logic: (1) associated corporeality; (2) dynamics of movements; and (3) synchronous embodiment.

Obviously, the analysis we report here is a very precise snapshot of two cases of crying and the variation of corporeality. Other contexts - even with socio-cultural implications in their diversity - may lead to the manifestation of other relevant factors. The interaction of babies has proven to be a dynamic far from simple understanding because it is the basis for entering the world of language and from there to speech. In their first months of life, corporeality reveals itself rich and, at the same time, challenging precisely because it is not a period that ends in itself, as if to mark the phase that only survives in the tempest of early infancy. It is much more than that.

The embodied gestures that present themselves in this phase signal to the field of language in various instances, even in the health of the communicative systems of the baby, given that all neuropsychological protocols embed in all stages the manifestation of language in its non-verbal phase. It is transient in some contexts of human development but will persist in other contexts throughout life as it reveals the past phases in which socio-emotional balance was being honed. We considered, for all that we have exposed, that further research in this same vein needs to be encouraged in the field of language acquisition to enhance knowledge of corporeality in this little-studied phase of human development.

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References

- AMTHOR, F. *Neurociência para leigos*. Tradução: Samantha Batista. 2. ed. Rio de Janeiro: Alta Books, 2017.
- BAECK, Heidi. *Estudo longitudinal de atributos acústicos do choro de bebês normais (0 a 10 meses), associados ao contexto de fome*. Tese de doutorado. Rio de Janeiro: Universidade Federal do Rio de Janeiro, 2006.
- CLARK, E.V. *First Language Acquisition*. Cambridge University Press Second Edition, 2009.
- DAMÁSIO, A. *E o cérebro criou o homem*. São Paulo: Cia das Letras, 2009.
- DIGGLE, P.J., LIANG, K-Y, ZEAGER, S.L. *Analysis of Longitudinal Data*. 1ª edição. Oxford: Oxford, 2002.
- EKMAN, P. *A linguagem das emoções*. São Paulo: Lua de Papel, 2011.
- FREITAS-MAGALHÃES, A. *O código de Ekman: O cérebro, a face e a emoção*. Porto: Edições Universidade Fernando Pessoa, 2011.
- MEYER, P. *O olho e o cérebro: biofilosofia da percepção visual*. Tradução Roberto Leal Ferreira. São Paulo: Editora UNESP, 2002 [1997].
- PIAGET, J. *A Construção do Real na Criança*. Trad. Álvaro Cabral. Rio de Janeiro: Zahar, 1970.
- SILVA, A. M. *Desenvolvimento infantil: as competências e o desenvolvimento das crianças dos 0 aos 2 anos*. Lisboa: Climepsi Editores, 2011.
- TEOBALDO, O. *A infância de meu bebê*. Youtube, 21 de junho de 2021. Disponível: <https://www.youtube.com/channel/UCCbbrvXBqb0y6s1vlb1BSAw>. Acessado em: 30 de dezembro de 2021.
- TOMASELLO, M. *Origens Culturais da Aquisição do Conhecimento Humano*, 1ª edição. São Paulo: Livraria Martins Fontes, 2003.
- VICENTE, R. B. *Iniciar é abstrato? É o lugar, é o tempo, é o espaço do caos cognitivo*. Tese de Doutorado. São Paulo: Universidade de São Paulo, 2014. Disponível em: <https://www.teses.usp.br/teses/disponiveis/8/8142/tde-12052014-101058/pt-br.php> >, Acesso em 1º de jun. 22.
- VYGOTSKY, L. S. *A Construção do Pensamento e da Linguagem*. São Paulo: Martins Fontes, 2000 [1934].
- WALLON, H. *Do Acto ao Pensamento*. Lisboa: Moraes, 1942.