

Modulo V

Cognitive, social, communication, language and cognitive development and early intervention (III)



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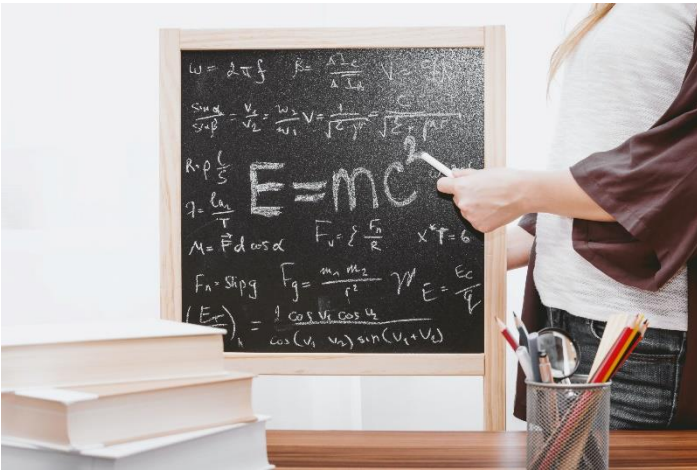
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During the **pre-operational period**, the child consolidates a series of **skills initiated in the sensorimotor period** while **acquiring new ones**. As we have seen at the end of this period, the child has acquired the **ability to represent**, although its development is not complete, as it will need other systems of representation, such as language, to consolidate itself.



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The **pre-operational period** was so called by Piaget, because in this period the child will not yet be able to perform operations, understood as a set of actions organised in systems that are dependent on each other. One of the achievements in this period is the construction of invariants. The child learns that an object remains the same even if it undergoes different transformations and therefore maintains its identity (acquisition of the identity of objects). Already in the sensorimotor period, the child has acquired object permanence, which basically implies a construction of invariants. The invariants that will be taken into account during the pre-operational period will still be simple and will be more concerned with qualitative than quantitative aspects (Delval, 1996).

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At the same time as he acquires the notion of identity of objects, he develops **relationships of functional dependence**, which implies that some events are associated with others and that a modification in the first one produces a change in the next one. As in the case of the concept of invariant, the acquisitions are of a qualitative nature (Delval, 1996).

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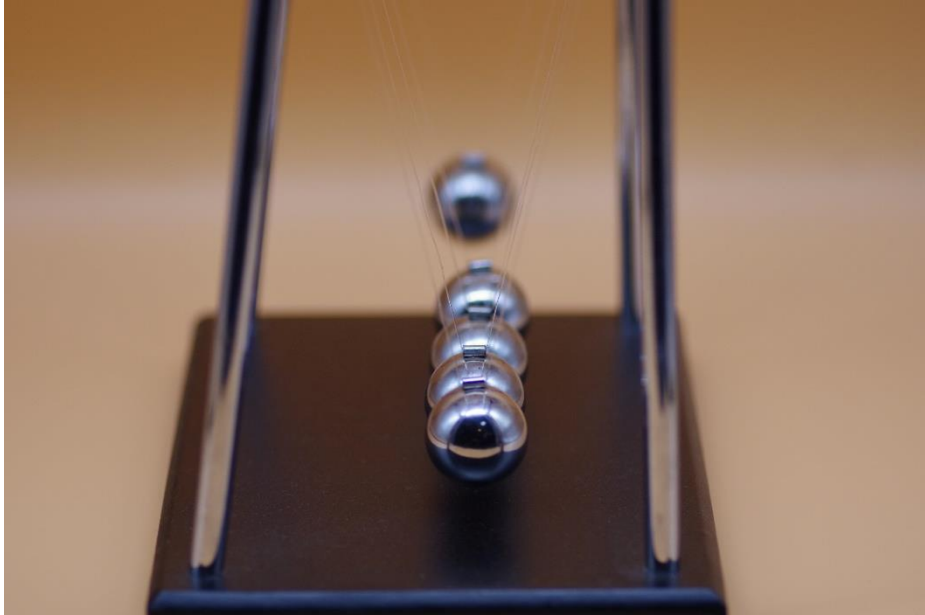


The acquisition of theory of mind in the pre-operational period.

We have previously described how there is a relationship between the development of metarepresentational ability in different domains: fictional play, **language acquisition especially semantic and pragmatic function and theory of mind.**

The first to introduce the concept of theory of mind were Premack and Woodruff (1978) in their work with non-human primates and later Wimmer and Perner (1983) would use it in their work with humans. The mind could be defined as a set of desires, beliefs, emotions or intentions whose interaction would form so-called mental states or mental representations.

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Mental states such as beliefs, desires are representations that mediate the interaction of the human subject in the environment, they are also called **intentional states**. This implies that they are always about something. Such states have a **propositional content**, which implies with the development of **predictive and causal thinking**.

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One of the most significant achievements in this period is the **development of language** and above all its insertion into the subject's own actions and those of others. In **Vygotskian terms**, language is a **privileged vehicle of cognition and will allow the subject to open up to the world of knowledge with an important tool**. This acquisition will facilitate the child's passage from the world of experimentation to the world of deduction. However, although from the Piagetian point of view, thought still has to make important conquests, among which we highlight the theory of mind. In the sensorial-motor period we have seen the development of the precursors and now we are going to see how it continues to evolve during the pre-operational period.

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Furthermore, the mind would have the capacity to represent these mental states to itself (Astington, 1998) and this would be one of the qualities that differentiate the human species. The capacity to have **meta-representations**, i.e. the ability to create representations about one's own representations and to infer representations about the possible representations of others, mediates human activity in the world and provides the subject with a psychological relationship with reality (Astington, 1998).

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Language and the development of theory of mind are two directly related aspects, although as Rivière and Nuñez (1996) point out, this does not mean that they are homologous systems, but it is a fact that the acquisition of linguistic skills will enable a greater understanding of conceptual systems of intentions, beliefs and desires (which is what is meant by theory of mind). The absence of language or the inhibition of language can lead to not really understanding the world of representations of others.

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Children may understand **mental representation** in a partial way and understand that beliefs and desires are **mental entities** that are separate from reality. As they evolve in their concept of mind, they will discover **representation** in its dual sense of **mental entity** and **mental activity**. That is to say, the **mind** will be able to develop **beliefs** about the beliefs of others and differentiate them from its own, and it will also have the ability to predict something based on these **attributed beliefs** and differentiate them from its own. This is why psychologists chose situations of deception as the most appropriate to see whether or not a subject has developed theory of mind.

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According to Rivière and Nuñez (1996), Peskins' studies differentiate three evolutionary moments in **tacit deception**. At around the age of three, children seem to have difficulties in using it. At a second stage, around the age of four, they still do not use tacit deception strategies as such, although they may develop them according to experience, and a third stage in which deception is used in a more fluid way.

Thus, it seems that by the age of five the **theory of mind** has developed in an evolutionarily "normal" process that over the years will be refined with respect to its conceptual elements of **power** and **recursivity** that is manifested in tasks involving **second-order skills**: the child must infer one subject's false belief about what another subject holds, i.e. represent a representation about another representation.

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Attitude (Type of mental state)	Propositional context
Belief	Chocolate in a cup
wish	Eating chocolate
Intention	Drinking the cup of chocolate

Beliefs	Wishes and intentions
True or false	Compliant or non-compliant
Caused by world events	Bringing about change in the world
Changing the world's setting	Make changes to the setting

Period	Age range	Better development
Childhood	Birth-18 months	Social perception
Young children	18 months-3 years	Awareness of mental states
Preschool	4-5 años	Metarepresentation
Preschool	6 años	Recursivity and interpretation

Astington & Dack (2008) p. 5

Astington & Dack (2008) p. 4

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Theory of Mind in Pre-school Education 4-5 years old

Understanding false belief in oneself and others

Understanding disappointment

Distinguishing between appearance and reality

Understanding aspects of knowledge acquisition

Distinguishing between desire and intention

Understanding causal intent

Understanding emotion-based belief

Astington & Dack (2008) p. 8

Theory of Mind in Pre-school Education 6 years old

Understanding second-order ToM

Reorganising and interpreting diversity

Understanding of indirect language, understanding of irony

Awareness of lies and persuasion

Use and understanding of mental states

Understanding inference, ambiguity and referential opacity

Stream-of-consciousness awareness, introspection

Astington & Dack (2008) p. 9



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These aspects are concretised in the resolution of different types of tasks. At a first stage in the process of acquiring theory of mind, the child will be able to solve **false belief tasks**. In these tasks, a story is staged in which the protagonists are two children, one of whom has an attractive object (e.g. a marble, a doll...) that he/she keeps in a specific place (e.g. a box, a basket...). At a certain moment this child (whom we will call Juan) will leave and the other child (whom we will call Luis) will be left alone in the room, then Luis will take the object (marble, doll...) and will change its place (put it in another box, in another basket...), then Juan will return and we will ask the child in our experiment "Where is Juan going to look for the marble, the doll...? This is when he should put himself in the place of the other child and differentiate between what he knows has happened and what Juan really knows.



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Later on, they will be presented to solve second-order tasks, in which the child will have to infer the false belief of one subject about what another subject has. The experiment is similar to the previous one with the difference that the first character, Juan, when leaving the room has the possibility of seeing through a window what is really happening and then he no longer has a false belief of what has happened but a true belief. Now the questions asked to the experimental child are: "Where does John think the marble is?" (this question implies a true belief) and another "Where does Louis think John will look for the marble?" (a question that implies a false belief). The latter question involves a high degree of recursivity and is adequately answered by children at about six and a half years of age (Rivière and Nuñez 1996).



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Mind can be understood as a construct that is itself representational. Therefore, having a mind is equivalent to having representations and attributing a mind implies attributing representations to others. Thus the intentional recursivity of subjects uses language on many occasions to try to modify the mental worlds of others. From this approach, theory of mind would be directly related to pragmatic skills that allow forms of interaction and communication from a declarative function (Rivière and Nuñez, 1996; Happé, 1998). This capacity can be understood as an ability or set of cognitive skills that will allow the development of interaction and communication processes between human beings and facilitate the development of adaptive behaviours to the environment according to their acquisition dynamics.

How to develop an Early Stimulation Programme for 3-6 year olds

Intervention programme design

- Unit objectives
- Unit assessment indicators
- Tasks to work on in the unit
- Materials needed to work on the unit
- Generalisation activities of the unit

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Lines of cognitive intervention on preoperative development

At this point we still have a challenge to meet, which would be to point out lines of intervention to facilitate cognitive and social development at this age. To this end, we have developed a Cognitive Intervention Programme for young children (Sáiz and Román, 1996), which includes important aspects of cognitive intervention related to the development of:

- Basic prerequisites for learning.
- Skills to develop planning thinking (means-ends strategies).
- Skills to develop self-evaluative thinking.
- Skills to develop consequential thinking.
- Skills to develop alternative thinking.
- Identification of emotions.



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Lines of cognitive intervention on preoperational development

By way of summary, in Table 1 we point out the most representative acquisitions in the preoperational period as well as some of their limitations (Delval, 1996) and we point out possible intervention strategies (Sáiz-Manzanares and Román, 1996).



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Table 1: Dimensions of Sáiz's Symbolic Play in Gómez, A., Viguer, P., & Cantero, M.J. (2003). *Intervención Temprana: Desarrollo Óptimo de 0 a 6 años*. Madrid: Pirámide. pp. 128-129.

Pre-operative procurement	Cognitive intervention strategies
<p>Ability to represent by means of differentiated signifiers, the ability to represent that began in the sensorimotor period is developing.</p>	<ul style="list-style-type: none"> Facilitate the development of representational skills (through the use of language, drawing, deferred imitation, the improvement of symbolic play and in general all representational skills). The adult will act as we have already pointed out in other sections, modelling and moulding the child's actions and will also reinforce the child's attempts at execution, however small they may be.
<ul style="list-style-type: none"> Ability to communicate through language: <ul style="list-style-type: none"> * informative function: transmitting/receiving information through language. * Self-regulation function of one's own behaviour through language. * function of regulating the behaviour of others through language. 	<ul style="list-style-type: none"> Promote the child's use of language both to ask for and to transmit information. The adult will model their actions by regulating their behaviour through their own language (Meichenbaum's self-instructional training is used here). The adult will model the child's actions first through his own language and then will try to make the child himself regulate his actions through his language (see Cognitive training programme, Sáiz and Román, 1996).

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Table I: Dimensiones del Juego Simbólico de Sáiz en Gómez, A., Viguier, P., & Cantero, M.J. (2003). *Intervención Temprana: Desarrollo Óptimo de 0 a 6 años*. Madrid: Pirámide. pp. 128-129.

Pre-operative procurement	Cognitive intervention strategies
<ul style="list-style-type: none"> • Ability to use language to explain events in everyday life. • Understanding of entities and functions (acquisition of invariants and regularities of a qualitative nature). <ul style="list-style-type: none"> * Identities. An object remains the same even if it undergoes some transformations (as long as the transformations are qualitative). * Functions: Functional dependence is developing (a modification in one situation produces a modification in the second and so on, attends to qualitative transformations). 	<ul style="list-style-type: none"> • Trabajar desde lo tangible, proporcionado al niño múltiples experiencias que le ayuden a comprender mejor: <ul style="list-style-type: none"> * las variaciones que se producen en los objetos y fundamentalmente el proceso de transformación tanto en la formación de identidades como en el desarrollo de la dependencia funcional.
<ul style="list-style-type: none"> • Differentiation between appearance and reality. • Elaboration of the theory of mind. 	<ul style="list-style-type: none"> • Work on the development of processes. • Facilitating the development of theory of mind, enabling fictional and dramatisation situations that help the child to get out of the centring processes, to put him/herself in the other's place and to take into consideration different perspectives or points of view.

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Tabla I: Dimensions of Sáiz's Symbolic Play in Gómez, A., Viguera, P., & Cantero, M.J. (2003). *Intervención Temprana: Desarrollo Óptimo de 0 a 6 años*. Madrid: Pirámide. pp. 128-129.

Beginning of acquisitions and learning to be perfected in the pre-operative period	Cognitive intervention strategies
<ul style="list-style-type: none"> • Begins to develop problem-solving strategies, but has difficulty in considering several aspects of the same situation simultaneously). • Still has difficulties in understanding that an object can belong simultaneously to two classes. • Has difficulty in understanding processes and tends to see elements in isolation. • Has difficulty in developing generalisation processes. 	<ul style="list-style-type: none"> • Facilitate the development of problem solving processes* by enabling the child to tangibly have several aspects of the same situation in front of him/her simultaneously. • Using problem solving strategies* the adult will play games in which the child can see that an object can belong to two or more categories at the same time (categorisation processes). • Place special emphasis on the child observing and understanding the process and not only the outcome of a problem or situation. • Facilitate the development of generalisation* processes of learning. <p>* See Cognitive training programme for young children (Sáiz and Román, 1996).</p>

Developmental differences

- Attention problems
- Comprehension problems
- Problems in language development
- Problems in the development of means-ends, consequential, predictive thinking ...
- Problems in the development of symbolic play
- Type of social and family stimulation context
- Problems in social skills

Type of associated pathologies

- Autistic Spectrum Disorder
- Sensory difficulties (hearing, visual)
- Intellectual disability
- Behavioural problems (Attention Deficit Disorder, attention deficit disorder)

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