IMITATION DEFICIT AND AUTISM: A REVISION

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Abstract: Autism is a disorder in which lack of interaction and communication with the other appears as the main characteristic. In the late 70's and early 80's, a great interest was raised by studies that considered deficits in the area of social relationships as primary to the emergence of the syndrome. From previous research on the relationship between early imitation and early establishment of social relations, some researchers began to assume that imitation deficits presented by the autistics could be related to deficits in social interactions presented by these individuals. The present study proposes to review international literature on the major contributions that aimed to investigate the presence of an imitation deficit and its possible causal role in autism.

Keywords: autism, imitation, intersubjectivity.

Introduction

The first published articles on early imitation date from the end of the nineteenth century, but these studies did not intend to explain it, only to report its existence (Moura & Ribas, 2002). One of the first researches that tries to clarify early imitation is that of Guernsey (1928, quoted by Moura & Ribas, 2002), who considers it as a reflex, yet capable of becoming active and conscious throughout

time. From these first studies, many others were made in which it was attempted to establish at what moment in infantile development imitation takes place, as well as its functions and the actions that can be imitated.

In the other hand, the first description of infantile autism syndrome was made, in 1943, by Leo Kanner. The article entitled "Autistic Disturbances of Affective Contact", published in the extinguished journal *The Nervous Child*, comprises the presentation of 11 clinical cases depicting children that, by presenting the same clinical manifestations, give Kanner the subsidies to institute the new syndrome, whose symptoms were categorized in three groups: social inability; language and communication disorders; and repetition need or sameness.

Kanner emphatically highlights the nuclear importance of interpersonal relations problems in the syndrome: "The outstanding, 'pathognomonic', fundamental disorder is the children's inability to relate themselves in the ordinary way to people and situations from the beginning of life". He also analyses specific language difficulties, once its use as a communicational tool is fundamentally damaged. In addition, the author evaluates the overwhelming difficulties that these patients have when faced with new stimuli, because "everything that changes his external, or even internal, environment represents a dreaded intrusion" (Kanner, 1943).

Despite Kanner's emphasis in the social relations deficit existent in autism, the main researchers in this field focused, for several years, the language and communication problems supposedly at the basis of the disorder, favoring, thusly, an understanding of the social deficit only as a consequence of these problems. The most important theories and conceptualizations on autism up until the 1980 decade were eminently marked by a depiction of autism as a cognitive and linguistic processes basic disorder, virtually ignoring the examination of the social and affective contributions to the syndrome (Klinger & Dawson, 1992; Rogers & Bennetto, 2000).

From the 1980 decade on, a new direction is noticed within these studies, when important researches, that challenged the field to reconsider the profound social deficit inherent to autism as a primary deficiency, were published.

The understanding of communicational or language deficits as secondary to the emergence of the disorder made possible for the researchers to thought of innumerous models. A broad range of these models was based in developmental studies that related the symptoms described by Kanner to the difficulty in the early interpersonal relation, that could result in all other symptoms that would accompany the autist in the subsequent years of his life.

It was at the end of the 1970 decade and during the 1980 decade that some researchers, departing from previous researches on early imitation, related the autistic disorder to a difficulty in accomplishing motor imitations (Rogers & Williams, 2006). Progressively, this deficit comes to play a larger role in the researches concerning autism, turning the absence of imitation into a common characteristic of those afflicted by the disorder, leading to a series of studies that aimed to lay this correlation on solid theoretical and empirical ground.

This movement was fomented by some studies that suggested that the mothers' imitation was fundamental in order to enable the babies' first interpersonal relations. These results indicated that deficits in the early imitation capacity could implicate some problems in the subject's interpersonal relations development, as those observed in autism.

In Stern's model (1985), sharing emotions in the period between 3 and 6 months of life is an essential vehicle for interpersonal development. The author reminds us that mothers and babies imitate themselves mutually in the first months of the children's life, and that a communicational form is established in this exchange. According to Stern (1985), motor imitation can serve as a portal, a gateway to the experience of a lifelong feeling of connectivity with other people, that is, as a foundation to the sharing of experiences through activities, emotions, and thoughts.

Still in the first months of life, mothers or primary caretakers communicate with the babies through direct imitation of their bodily movements, facial expressions, and vocalizations; the babies, on the other hand, take interest in the play responding with gazes and smiles (Klinger & Dawson, 1992). Children, soon after they are born, are already capable of imitating the facial expressions that are directed to them. Heiman (1989, quoted by Klinger & Dawson, 1992) examined the relation between early infantile imitation and infantile visual contact, and perceived that the children who were less capable of imitating in the first days of life were also those who presented the greatest aversion to visual contact at three months. Thus, this discovery suggests that early imitation plays a key role in the establishment of early social interaction.

In 1991, Rogers and Penington made a bibliographical revision of the articles, published up until then, that related imitation and autism. The result was categorical: according to the authors, the articles that employed a strict methodology reached the same conclusion, that is, *the possibility of the existence of a nuclear deficit of motor movements imitation in autism*.

These important studies carried out since the 1970 decade up until 2000, relating imitation deficits to autism, can be grouped in two specific moments according both to the way they were conducted and the intended goals.

Firstly, studies were developed in order to verify if there really was a specific problem related to motor imitation in the autistic spectrum disorder. These researches concerning the establishment of a correlation between imitative deficit and autism started in the 1970 decade, and carried on until the mid 1990's. They consisted in the application of tests in groups of autistic individuals from different ages, in order to measure their capacity of accomplishing motor imitation. The results, related to various aspects of the capacity to imitate another's action, were compared to those of people with normal development and to those of people suffering from other deficiencies.

These results allowed to verify a solid correlation between autism and imitation issues. This led to yet another twist in the researches on autism, insofar as the main scholars, who conducted these researches, joined new investigators, not to ask if there really was an imitation capacity deficiency associated to autism, but to define what could be on the basis of the imitation deficit. This came to be one of the main goals of the researches since the mid 1990's. They also proportioned, through their results, the possibility of developing intervention programs based on the direct imitation of the autistic's behavior, aiming to produce communication effects in the carriers of the syndrome.

This article will limit itself to the tracking, in the international literature, of works related to the establishment of this clear correlation between autism and imitation deficit. The studies revision that follows contemplates publications situated, in their majority, between the decades of 1980 and 1990.

1. Historical context

An extended understanding of the scientific atmosphere in which the researches on imitation and autism are located within the international scenery is key to the correct appreciation of the latter. In 1953, Ritvo and Provence (quoted by Moura & Ribas, 2002) suggested, for the first time, a correlation between imitation and autism, but this kind of research was only revisited two decades later, when a whole context of studies and developed theories could support the recovery of the topic.

In the 1950's, and specially in the 1960 decade, Piaget, Bandura, and Skinner, in addition to other scholars, approached the role of imitation in the psychic development, thusly establishing this concept in the psychological research (Rogers & Williams, 2006). Piaget (1975) states that imitation is guided by an internal representation of the other's action. From there, a connectivity between he who accomplishes the action and he who imitates it is grounded. However, Stern (1985) says that this kind

of imitation theory is not sufficient to explain the connectivity between people when affective states are at stake. How could one carry out an internal representation of affective states of another from a motor imitation?

The question that arises here is more complex, for it is related to the manner through which one can touch something internal to the other's subjective experience, and, at the same time, allow, without the use of verbal communication, the other to become aware of it. In the case of the interaction between mothers and very young babies, communication is, to a great extent, established through motor imitation's mutual movements. In this sense, the key to the evaluation of all of the extent of early imitative phenomena lies in the comprehension of the nature of the reciprocal understanding of the affective states of both.

Affective contagion can be one of the most important concepts in order to understand the nature of this process. Affective contagion is an automatic mechanism characterized by the induction of an affect in a certain individual from the moment he sees or listens to the manifestation of the same affect in someone else. We can evoke, e. g., the automatic imitation of someone else's laughter when one witnesses it, and the emergence of the corresponding internal feeling associated to laughter. The younger is the child, the stronger is the influence of these affective contagion phenomena (Stern, 1985). In the 1980 decade, imitation begins to be seen as a mechanism capable of explaining the mutual sharing of affective states in an intersubjective relation. Uzgiris synthesizes this point of view stating that "an instance of imitation can epitomize the presence of mutuality; to do something that has just been done by another is to know something not only about the act, but also about the similarity between oneself and the other" (quoted by Klinger & Dawson, 1992, p. 161).

Alongside to the importance granted to imitation in the sharing of affective states, important discoveries in the field of physiology of sensations contributed decisively to researches that searched to ground the relation between imitation and autism. A portion of these researches focused on the physiological processes that underlie the autist's reception of stimuli from the environment in comparison to non-carriers of the syndrome. Departing from the verification of innate individual differences in the perception capacity as well as in that of being affected by stimuli, some authors formulated the hypothesis according to which autistic children would be easily hyper-stimulated. In a 1975 study, Hutt, Forest, and Riccher (quoted by Klinger & Dawson, 1992) found significantly higher levels of spontaneous variability in the cardiac rhythm of autistic children when compared to children without the deficiency. This variability decreased every time that these children

engaged themselves in simple and monotonous tasks. Other studies regarding spontaneous cardiac rhythm, measured in many environmental conditions, showed that autistic children exhibited a larger susceptibility to cardiac rhythm variations when compared to children without the deficiency (Klinger & Dawson, 1992), suggesting, thusly, the presence of more accentuated emotional reactions to environment stimuli. These discoveries led Klinger and Dawson (1992) to formulate the hypothesis according to which autistic children have a narrow optimum stimulation spectrum, i. e., the spectrum in which the stimuli intensity would not be neither insufficient nor excessive. The autists' ability to confer meaning and to relate to their environment would therefore depend, to a great extent, of the regularity and familiarity degree of the stimuli received by them.

Considering that interpersonal relations constitute the main source of stimuli unpredictability, nothing would be more natural to autistic children than the refusal and avoidance of these relations.

It is important to signal, still concerning the studies that focus physiology, an interesting observation made by Field (1977, 1979; quoted by Klinger & Dawson, 1992), in which imitation is conjugated with physiological alterations. It is verified that premature children become more attentive and present a cardiac rhythm decreasing when their mothers systematically imitate their behaviors, instead of freely interacting with them. Klinger and Dawson (1992) conclude, from that, that the act of imitating a child contributes to reduce the quantity of stimulation he experiences, casting him in the role of an interaction initiator. All of these facts render the physiology studies, that started at the end of the 1950 decade and advanced up until the 1990's, extremely important in the establishment of correlations between imitation and autism. Let us remind, nonetheless, that at this same period studies establishing the importance of imitation to normal development were also flourishing.

2. Researches on imitation and autism

Many experiments prove that autistic children present a larger capacity of social interaction when they are imitated. We will bring forth in what follows, e. g., a succinct exposition of some of these experiments, starting with those in which the gazing capacity served as an evaluation parameter to the socialization improvements obtained.

Dawson and Adams (1984, quoted by Klinger & Dawson, 1992) discovered that imitation increased gazing and social response (touches, vocalizations, gestures) in autistic children. Encouraged by these imitation effects, Dawson and Galpert (1990, quoted by Klinger & Dawson, 1992)

carried out an experiment in which they have examined the cumulative effects of parental imitation throughout an intervention period of two weeks. Fifteen pre-school autistic children, aged 2 to 6, and their mothers participated in the study. In the beginning of the study, mothers and children were observed during a period of free recreation. Afterwards, two sets of identical toys were given to each mother; it was asked of them to imitate their child's actions using the toys, daily, for 20 minutes, throughout two consecutive weeks. At the end of this period, mothers and children were filmed during another free recreation section, as well as during imitation sections with new toys, and using the previous toys sets. Compared to the free recreation, children showed significant increasing in the gazing of their mothers' faces average duration during the imitation sections. A corresponding decreasing in the amount of time spent gazing at the mothers' actions with the toys was noted, suggesting that parental imitation had a positive effect on the child's social attention. That is, the children not only found their mothers' contingent interaction with toys more interesting, but also found the social interaction more interesting (Klinger & Dawson, 1992).

In 1984, Sigman and Ungerer (quoted by Williams, Whiten & Singh, 2004) examined paired groups of autistic children, children with mental retardation, and children with normal intelligence. Simple imitation tasks were employed following the *Motor Imitation Scale*, proposed by Uzgiris and Hunt in 1975, based, mainly, on Piaget's description of the sensorimotor development, and divided in seven domains comprising operational causality development specificities, vocal imitation development, gestural imitation development, amongst others (Gomez, Sarria, Tamarit, Brioso & Leon, 1995). During the experience, the children watched a video in which a variety of behaviors to be imitated were showed. The children were, then, instigated to repeat the previously seen behavior. The obtained results revealed that all of the children were capable of imitating, as long as they would use the object for its real goal. Autistic children, however, did much worse than the two other groups regarding symbolic tasks that involved, for instance, the imitation of pure pantomime behaviors. From these data, the authors could infer the existence of a narrow correlation between expressive/receptive language ability and imitation ability.

Stone, Lemaneck, Fishel, Fernandez, and Altemeier (1990) published a long study analyzing 91 children, aged 3 to 6, separated in four groups thusly divided: mental retardation, hearing disability, language impairment, and autism. In order to evaluate the motor imitation abilities, individual tasks were proposed. Playing, on the other hand, was analyzed through structured observations of the free recreational activities. Autistic children spent less time interacting with toys and using them properly. Despite the absence of reliability measurements and of a deficient control

of the study's tasks, it came to the conclusion that only the autists' group presented an imitation deficit (Williams et al., 2004).

In 1991, Rogers and Penington conceived a developmental model that could account for the earliest symptoms of autism. Inspired by Stern's book (1985), *The Interpersonal World of the Child*, the authors proposed the *Rogers and Penington's Developmental Model*, that explained the mechanism through which an imitation deficit could significantly affect interpersonal development. The imitative function deficit would be at the basis of a series of developmental damages, that would result in social relation and communicational problems, as well as in restricted and repetitive behaviors.

To explain this series of developmental difficulties, the authors suggested the existence of an affinity between movement and emotions in typical interpersonal exchanges, and that a damage to this motor-affective relation would interfere with autists' corporal coordination. Movement would be emotion's messenger. Coordinated movements between social partners, as the reciprocal imitation between mother and baby, could function as to preserve the emotional connectivity necessary to the interaction with others, both in childhood and throughout life. In autism carriers, this emotional connectivity with the other would be impaired due to the absence of the motor-affective coordination provided by the social partners' reciprocal imitation processes.

Rogers and Penington (1991) relate, in their model, imitation deficit to damages in the execution of corporal movements, as well as to the enfeeblement of emotional exchanges in the autist's social relations. From that, autism's basic difficulty could be thought in terms of a limitation in the capacity of imitating, internally and automatically, the behavior of others, or, in other words, a limitation in the capacity of "putting oneself in the place of the other", that would imply continuous deficits in the understanding of the other's actions and feelings.

It was in this very study from 1991, that Rogers and Penington made a bibliographical revision of the articles, relating imitation and autism, published up until then. The result of this bibliographical revision is decisive. According to the authors, the articles that employed a strict methodology all reached the same conclusion: *the possibility of the existence of a nuclear deficit of motor movements imitation in autism*.

Analyzing the same possibility, that of a deficit in the motor imitation capacity as one of the central issues of the autistic disorder, Meltzoff and Gopnik, in 1993 (quoted by Rogers & Benetto, 2000), carried out a study whose results were determinant for the accomplishment of other researches in the area. Rogers and Benetto (2000) thusly comment Meltzoff and Gopnik's study:

> Meltzoff and Gopnik (1993) have provided a detailed theoretical account of role of imitation in developing self-other awareness during infancy. They suggested that infants' imitation of emotional expressions creates an internal affective state that matches the partner's, giving the infant an internal sense of matching between self and other (and that corresponds to physical matchings of self and other) – the experience emotional mirroring. Thus, through imitation, the infant is experiencing the synchrony between the self and other's internal and external states. (Rogers & Benetto, 2000, p. 95-96).

In this passage, the correspondence between "self" and "other", as something that is derived from an internal feeling, is made clear, that is, the way relating to another is "experienced". This correspondence between corporal movements and internal experiences allows, according to the authors, slightly older children to read the intentions behind the movements of other people, sharing with them their own intentions, emotions, and attention to a certain stimulus, thus creating a communication foundation. Still, according to Rogers and Benetto (2000):

> Meltzoff and Gopnik suggested that having a sense of internal correspondence between self and the others' intentions is a midpoint on the way to a sense of correspondence of mental states of self and other. These authors suggested that in autism, a primary deficit in imitation blocs the child from developing the "like-me" sense at the level of body correspondence, emotional correspondence, and attention. The child with autism is unable to use imitation as a tool for constructing internal self-other correspondence building at the level of affect or mind. (Rogers & Benetto, 2000).

The 1993 Meltzoff and Gopnik's model intends to explain how imitation works in the establishment of this internal connection feeling between the self and the other. A sort of correspondence between corporal movements and internal experiences between people, enabling the construction of the foundations for communication and interpersonal relations, would be at stake in imitation. A difficulty to accomplish imitation, inherent to autism, would seriously disturb the development of this connection between the self and the other.

The hypothesis analyzed in the studies carried out until the beginning of the 1990 decade is clear: there is an imitation deficit in autism carriers that accompanies them since an early age, and that could implicate in a series of developmental impairments, including the communicational and affective connection between the autist and the other. A series of studies continued to be made, since then, in order to corroborate e delimitate more precisely the correlation between motor imitation deficit and autism. Some authors conducted their studies believing that the imitation deficit was crucial to the autistic disorder, while others believed

it was secondary to the emergence of the disorder. Despite these divergences, the studies' results, to be commentated in the following, indicate a striking presence of an imitation difficulty in autists of all ages, and within various degrees of the syndrome.

In 1994, Charman and Baron-Cohen (quoted by Williams et al., 2004) tested a large number of children through the Uzgiris-Hunt Scales, used to measure child's developmental state, as well as through tasks described by Meltzoff in his 1998 articles on the relations between infantile imitation and memory. The study aimed to compare the gestural imitation capacity to processional imitation, i. e., that of actions and objects. The age considered appropriate for a satisfactory performance in the tests varied from 7 to 20 months in relation to gestural imitation tasks, while processional imitation tasks required a minimum age of 9 months. Once the children who were observed in the study had a mental age between 4 and 7 years, a high level of success was verified in the majority of the tasks. Only one of them, in the processional imitation category, consisting in the verification of child's capacity to press a button with his forehead, that is, a non-usual procedure, allowed a differentiation between the group of children with a language impairment and the group of autistic children. The authors suggested that, probably, this was due to the fact that the aforementioned task was more imitation dependent than the others.

Still in 1994, Smith and Bryson (quoted by Williams et al., 2004) carried out a revision of 15 studies concerning the relation between imitation and autism. In consequence of this analysis, the authors suggested that a biological impairment would restrain the autistic child's ability to form and coordinate social representations of the self and of the other proportionally to the complexity of the latter. From these findings, they formulated the hypothesis according to which a primary deficit in this capacity would lead to a series of effects in the autistic subject, which would include a damage to the affective, communicational, social, and imitative capacities; being that a pre-frontal limbic system deficit could be at the basis of these deficiencies.

Brown (1996, quoted by Williams et al., 2004) carried out a study comparing autists from three different age groups, subjects with normal intelligence, and subjects with mental retardation. The imitation capacity was compared through a wide range of tasks, including a mix of 93 actions with objects, gestures, and vocal expressions. Autistic children presented an inferior performance in imitation tasks in comparison to the other groups of children. Nevertheless, slightly older autistic children and autistic adults had a good performance in general, obtaining the maximum score in most tasks. This author also investigated two aspects of imitation with new objects, introducing a *two-way* method to test imitation. In this manner, the experimenter exposes one of the possible solutions to the

participant, and, concomitantly, asks him to accomplish the task. Thus, the method enables the experimenter to analyze whether the participant will imitate the presented solution, or try to resolve the proposed task in another possible fashion (Fawcett, Skinner, & Goldsmith, 2001). The study was divided in two moments, being that the first one comprised the spontaneous imitation related to the opening of an artificial fruit. This task involves the opening of the fruit in front of the child, using but one of several possible methods to remove the pin, the handle, and the screws. After being reassembled, the fruit is, then, handed to the child. The identity degree between what the subjects displayed in their opening method and what they observed provides a spontaneous imitation measurement. Young autistic children showed a smaller inclination to imitate what they saw, and the differences between autists and non-autists, once again, decreased in an inverse proportion to the subjects' age. The second moment of the study consisted in demonstrating one of two possible ways of opening a drawer, and, in the next day, asking the subjects to try to open it. Once again, the autists' group was less inclined than the control group to imitate the method presented to them.

In a 1996 study, Rogers, Benetto, McEvoy, and Penington evaluated the motor imitation performance of 17 highly functional autistic adolescents, whose cognitive functions and daily tasks accomplishment performances were close to normality. The subjects had their performance compared to that of other 15 control group adolescents, picked out based on a chronological age and verbal intelligence coefficient pairing. The main results are related to the acknowledgment that both gestural and vocal imitation impairments are present throughout the autist's life; in this case, even in older patients (adolescents) with high levels of verbal intelligence.

Roeyers, Van Oost, and Bothuyne (1998, quoted by Williams et al., 2004) used tasks involving new objects in order to test, in autistic and non-autistic five years old children, what they called processional imitation (imitation carried out with objects that are considered new to the subject). The authors found highly significant differences between the control group and the autists concerning processional imitation, but this difference was even greater when compared to the gestural tasks. Half of the autistic children inconsistently imitated the gestural tasks, compared to just one out of eighteen in the control group. The most discriminator task was an invisible meaningless gesture, that involved the clapping of hands at the back of the head. Regarding processional tasks, the best discriminator was a task not associated to any sensorial effect, that involved the transference of a ring from one to another branch of a toy tree. However, it is necessary to take into account that the experimental outline does not preclude the possibility of subjects

using previously learned methods to obtain the same result (emulation). This could cast doubt on the obtained results, for it is not possible to define whether the actions with the objects were really tasks that stimulated the capacity of attaining a goal through imitation, or if, instead, they led to the utilization of previous learned procedures, dismissing, thus, the use of imitative abilities towards the reaching of a goal.

In 1999, Hobson and Lee proposed a study through which they intended to find out not only if autistic children were capable of imitating the central configuration of an action, but also the style of this imitation. The authors compared autistic and mentally retarded children throughout the performance of tasks which involved the use of meaningful objects in a meaningless fashion. However, the results were not considered trustworthy, for they did not establish a difference between basic imitation difficulties and the so called inversion errors, those in which the imitator replies the gesture only in the perspective through which it was observed. Despite that, there were still a considerable difference between the groups concerning the imitation of the style through which the action was accomplished: autistic children imitated the particular style of the demonstrator's actions with less frequency than the other children (Williams et al., 2004).

Rogers (1999) carried out a studies revision relating imitation and autism up until 1997, finding strong evidence that supported the existence of an imitation deficit in autism. However, he came to the conclusion that there was not sufficient proof to determine which imitation components were affected, or even if the deficit was caused by a motivational, practical, or self-other correspondence impairment.

In 2000, some problems regarding the Meltzoff and Gopnik's model (1993) were pointed out by Rogers and Benetto (2000). According to the latter, Meltzoff and Gopnik end up exaggerating the autists' imitation difficulty. According to the authors: "There are autists with a wide variation in the social field; thus, the quality of imitation in autism is usually low, varying from individual to individual in this low functioning level, but it is never completely absent" (Rogers & Benetto, 2000).

In order to explain the social skills variability in the carriers of the autistic disorder, Rogers and Benetto revised Rogers and Penington's Developmental Model (1991), that suggested a nuclear deficit in the motor movements imitation capacity in autism, concluding that:

> We are suggesting that the social cascade can occur, in partial, fragmented ways, for people with autism. Partial improvements in imitation would lead to partial experiences of emotional contagion and to moments of affective coordination of self and other. This, in turn, would allow for partial development of intersubjective and intentional awareness, including some aspects of joint

> attention, empathy, symbolic play, and intentional communication. We are suggesting, however, that the synchrony of movements, voices, and expressions will continue to be impaired in autism, even among high-functioning individuals. This will result in continuing difficulties in interpersonal relatedness, limiting the person with autism's access to internal states of other people through emotional contagion and synchrony and preventing comprehensive development of intersubjective knowledge and of emotional attunements. (Rogers & Benetto, 2000)

Thus, the imitation deficit continues to be, in the Rogers and Penington's model (1991) as revised by Rogers and Benetto (2000), the kern of autistic syndrome. The partial improvement of imitative capacity would be responsible, according to the revised model, for a variation in autists' capacity of carrying out intersubjective connections with another, that is, of relating to their social surroundings. The previous hypothesis offers important ramifications. From that, we could think that therapeutical interventions with the autist could make use of imitation as a tool for the establishment of communication channels, helping him, consequently, to mature in his interpersonal relations.

In 2003, Rogers, Hepburn, Stackhouse, and Wehner, believing that the imitation deficit could be the fundament of the social deficits present in autism, carried out a comparative study between autistic children, children – of the same age – with other developmental issues, and children with normal development. The goal was to evaluate the imitative performance of the groups and to verify whether the imitation deficit is really a characteristic peculiar to autism, or if it is also present in other development disorders. When compared to children with other types of development impairments and to normal children – through a battery of tests that measured the capacity to imitate –, autistic children had a significantly worse performance than the other groups in all the scales that measured the imitative performance.

Based on the studies presented so far, we believe to have vividly stated the correlation between imitative deficit and autism. The studies grounded a new turn in the researches within this field. New researches no longer ask if there is a correlation between imitation and autism, but depart from the acknowledgment that this correlation exists, directing their efforts to the examination of what kind of intervention, based on this acknowledgment, can make the treatment of autistic patients more efficient.

Within these new researches, imitation serves to the establishment of a communicational connection with the autist, whose bearable stimulation range is quite narrow. Imitation is presented as a way of bypassing this relation difficulty linked to the constitution of the autistic children, who, being imitated, could perceive the other with less anxiety.

This relation, established from the familiarity of the stimuli introduced via imitation, could evolve in other directions. But it is important to value this first contact establishment channel with a patient who pulls away from treatment due exactly to the difficulty of establishing a contact with the therapist.

The main researches that aim to ground these imitation based intervention propositions with autistic children will be examined in another work, whose goal will be to answer to the following questionings: is it possible to implement communication channels between therapist and autist through the use of simple techniques of motor imitation of the autist's movements? These imitative experiences would be effective to help the child establish a contact with his environment, making him less subjected to hyper-stimulation? The results presented by therapies that would eventually use this "imitative technique" could be generalized, and, therefore, useful even outside the setting of a specialized psychological treatment?

Déficit de imitação e autismo: uma revisão

Resumo: Autismo é um transtorno cuja característica dominante é a falta de interação e comunicação com o semelhante. No final da década de 1970 e início da década de 1980, iniciou a efervescência por estudos que consideraram os déficits na área das relações sociais como primários ao surgimento da síndrome. A partir de pesquisas anteriores sobre a relação entre imitação precoce e o estabelecimento das relações sociais precoces, alguns pesquisadores passaram a supor que déficits de imitação apresentados pelos autistas pudessem estar relacionados aos déficits nas interações sociais que esses sujeitos apresentam. O presente estudo se propõe a revisar na literatura internacional as principais pesquisas que investigaram a presença de um déficit de imitação no autismo e seu possível papel determinante no surgimento desse transtorno.

Palavras-chave: Autismo. Imitação. Intersubjetividade.

Le déficit d'imitation et autisme : une révision

Résumé: L'autisme est un trouble dont la caractéristique principale est le manque d'intéraction et communication avec les autres. Vers la fin des années 70 et début

des années 80 du siècle passé un grand intérêt a été dirigé vers le role primaire du déficit des rapports sociaux dans la genèse de ce trouble. En partant d'études préalables sur l'imitation precoce et le développement des rapports sociaux precoces, quelques chercheurs ont formulé l'hypothèse d'une relation entre le déficit d'imitation et le déficit d'interaction sociale chez les enfants autistes. Dans ce travail, nous nous proposons de faire une révision de la literature internationale spécialisée sur le role du déficit d'imitation dans le surgissement de l'autisme.

Mots-clés: autisme, imitation et intersubjectivité.

Déficit de imitación y autismo: una revisión

Resumen: El autismo es un trastorno cuya principal característica es la falta de interacción y comunicación con similares. A finales de los años 70 y principios de los 80, comenzó la efervescencia por estudios que consideraran los déficits en el ámbito de las relaciones sociales como primaria a la aparición del síndrome. A partir de investigaciones anteriores sobre la relación entre la imitación temprana y el establecimiento temprano de las relaciones sociales, algunos investigadores empezaron a asumir que los déficits de imitación presentados por autistas podrían estar relacionados con el déficit en las interacciones sociales que tienen estas personas. El presente estudio tiene como objetivo examinar la literatura internacional sobre los principales estudios que investigaron la presencia de un déficit de imitación en el autismo y su posible papel en la aparición de este trastorno.

Palabras-clave: autismo, la imitación y la intersubjetividad.

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