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THE FACULTY OF PSYCHOLOGY AND EDUCATION SCIENCES

PhD THESIS
Summary

ADAPTING PSYCHO-PEDAGOGICAL INTERVENTION METHODS TO AUTISTIC CHILDREN

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TABLE OF CONTENTS

NB: *the chapter and subchapter pages correspond to those in the PhD thesis in its entirety*

KEY-WORDS: autism, assessment, individualized intervention programme, methods of intervention, ABA, PECS, TEACCH, the Lovaas programme, adjustment, specific activities.

INTRODUCTION

Autism is a disorder that has always been riddling (Fritt, 1989). People with a normal or typical development do not manage to access the autistic persons' world as autistic persons cannot access our world. Researchers throughout the world have conducted many research studies and they have been interested in finding the causes generating this disfunction in order to understand how the autistic brain works, as well as the unique range of specific symptoms.

The way the autistic individual has been perceived in history has varied a lot. If in 1799 autistic children were labeled as "wild children" (the first case was described by Itard – Victor, "the Aveyron wild child"), in the nineteenth century they are called "idiots" by Séguin, while Moreau uses the term "infantile madness" to name the traits of autism. In 1943 the term "autism" was imposed by Kanner, but Stone (2004) reveals an autistic adult's opinion according to which the term "self-driven", often used when describing autistic persons, is offensive and people should understand that autistic persons aim at understanding themselves while lacking the ability, not the desire of understanding other people's emotions. Many recent studies insist on the fact that autistic persons should be helped to understand the various aspects of the world we live in, the characteristics of interhuman relationships; the approach towards all these should be a flexible one, based on love and affection and taking into account the uniqueness of each case, each autistic individual's interests, needs, cognitive traits, behavioral and sensory particularities (Stone, 2004, Moor, 2008, Shore şi Rastelli, 2006; Notbohm şi Zysk, 2004; Myles, Cooper Swanson, Holverstott, Moore Duncan, 2007).

Frith (1989) states that autism has been described for the first time by Leo Kanner in 1943 and by Hans Asperger in 1944 – they published case studies and they tried to explain the particular aspects of autism. Both of them used the term "autism" (from the Greek word "autos" which means "self") to describe this disorder; this term had already been used by the psychiatrist Eugen Bleuler in 1911 to refer to symptoms specific to schizophrenia and to describe the limits set between persons and their environment, withdrawal and avoidance of any type of social interaction. Kanner describes the autistic particularities by using expressions such as "autistic loneliness" (disorders regarding interactions between persons and their environment), "dullness drive wish" (the obsessive repeptition of some behaviours and the preference for keeping the

same pattern); “ability islands” (to describe the autistic children’s exceptional abilities at certain levels).

The majority of researchers studying autism agree that the autistic external symptoms are a feedback behavioral answer to an organic element of their brain. As a matter of fact, autism is a complex developmental syndrome, including a heterogenous group of individuals with similar symptoms, but with multiple biological etiologies (Secară, 2006).

Currently, autism is described as pervasive developmental disorder, the persons suffering from it manifesting social interaction deficiencies (using non-verbal behavior in communication, social or emotional reciprocity), verbal and non-verbal deficiencies, as well as a restricted and stereotypical range of interests and activities (American Psychiatric Association, 1994; Myles, Cooper Swanson, Holverstott, Moore Duncan, 2007).

In the case of the diagnosis textbooks, DSM-IV-TR and ICD-10, we can talk about a certain agreement on the specific symptoms of this disorder: communication and social interaction deficiencies, as well as repetitive and stereotypical behaviours (Volkmar, 1998).

The educational interventions in autism are considered to be the most efficient as they are non-biological interventions. There are studies in the research literature that show promising results and data (Lovaas states that a 40 hours/week intervention programme would lead to “healing”), but this aspect has been subjected to many criticisms.

Social interaction disorders, as well as communication, imagination and imitation disorders specific to the autistic persons require individualized and personalized approaches. The sooner we act on the autistic persons and we start a recovery programme, the better are their chances of improving themselves (Myles, Cooper Swanson, Holverstott, Moore Duncan, 2007).

The above-mentioned and described aspects are just some of the reasons that made me choose this research topic. *Adapting Psycho-pedagogical Intervention Methods to Autistic Children* deals with an aspect that is currently researched on a very large, international scale.

The theoretical aspects are divided in three different chapters. The first chapter tackles the main diagnostic criteria for autism, criteria that are stated in the official diagnosis and specific symptoms textbooks (DSM-IV and ICD-10). In the case of the specific symptoms, the main aspects refer to social interaction deficiencies, repetitive and stereotypical behaviours and sensory development.

The characteristics of the autistic child are dealt with differently in the second chapter which describes several of the particularities of the autistic children's playing ativities and which mentions some assessment items of this type of activities. It also mentions the specific aspects of language acquisition and communication development, of social integration difficulties and of the ritualistic and obsessive behavior and self-image development.

The most often used and efficient therapies when dealing with autism are presented in the third chapter dedicated to the theoretical basis: Picture Exchange Communication Systems (PECS), Treatment and Education of Autistic and other Communication Handicapped Children (TEACCH), Applied Behavioral Analysis (ABA) and the Lovaas programme.

The research part of the current paper is made of three chapters. Thus, the chapter tackling *the research methodology* presents those aspects focusing on the research proper: the main aims and hypotheses of the present research, the group of participants, the research tools and the research methods and strategies.

The case studies are presented in the fifth chapter and they underline the specific assessment and intervention methods that have helped autistic children function at an optimal level, both in their social and family environments. Since autistic children display a unique development and the symptoms of their development are various and complex (the research studies in this field also specifying this), the methodology of this research is not the traditional one. Therefore, longitudinal individual case studies were conducted as they were considered to be the best option to fairly and accurately present and exemplify the participants' progress and, of course, the main aspects of the research. The results are presented and debated on during each case study description, as well as in the sixth chapter, *Conclusions, Research Limits and New Research Perspectives.*

Chapter 1

CONCEPTUAL LIMITS IN AUTISM

1.1 Defining autism

Many studies describe autistic children as "self-absorbed" or "belonging to a different world", being characterized by a weak perception of the surrounding world and by language and

communication delays (Baron-Cohen, 2005; Baron-Cohen, Bolton, 1993; Lovaas, 1985, 1986). Often, these children do not accept change, their families having difficulties in going out with them. Autistic children can develop aggressive behaviors (hetero- and self-aggressive) and they can display self-stimulating behaviours that need specific intervention actions to be corrected (Schechtman, 2007; Lovaas, 1985, 1986).

In most of the cases, parents are the first to notice the specific behaviours of their children. Often, the child seems different even from its birth: he/ she does not react to the persons and toys populating his/ her surroundings (for instance, when they are called by their name or when different persons show them a toy) or he/ she sets his/ her gaze on a certain item from his/ her surroundings for a longer period of time. In addition, the child's different behaviors may also occur after a normal development stage, when parents or tutors notice that something is not right with their children (Mureşan, 2004; Muraru-Cernomazu, 2005; Baron-Cohen şi Belmonte, 2005).

If the start of autism is early, in their fourth to eighth month of life, these children display a lack of anticipatory reflexes/ responses and feedback when they are taken into somebody's arms or when their mother smiles at them (Bărbuţi, Giurgiu, 2004). The autistic child does not know how to process the information he/ she gets from the upper part of the human face. The eyes and the eyebrows are not information sources for them and they also stir strong, unbearable emotional responses in the autistic child (Mureşan, 2004; Baron-Cohen şi Belmonte, 2005; Lord şi Paul, 1997; Targer-Flusberg, 1992).

The symptoms manifest themselves under different forms, at different development or chronological stages. The language level and the seriousness of the symptoms can be related to the IQ level. The children with a high IQ level have a better prognostic; the lower the IQ level, the more serious the language and social development delays would be (Wing şi Gould, 1979). Anyway, the pre-schoolers' IQ level is not an indicator for the children's potential as some children register significant progress during early intervention programmes (Rapin, 1997; Eikeseth, 1999). In approximately 7% of the cases there is also accompanying mental delay estimation (Loftin, 2005).

Language skills are often delayed and when they eventually develop, they are, in most of the cases, echolalia language skills (Fay şi Schuler, 1980), repeating words and phrases uttered by the others (American Psychiatric Association, 2000; Gense şi Gense, 2002) in an

idiosyncratic manner (Gense şi Gense, 2002). The child may say “Do you want a cookie?” when he/ she wants a cookie or he/ she can repeat “n” times a single word. Moreover, children may wish to speak and to have a communication partner (Jamieson, 2004).

Autistic children are not able to decode social meanings and intentions, which is a processing problem accompanying him/ her throughout his/ her entire life. Thus, they will always have difficulties in interacting with the others and with their environment. They also have empathizing problems. Inappropriate behaviours, as well as those that are repetitive and ritualistic are common traits to all autistic children. Examples of such behaviours are the following: removing parts of and rebuilding objects (Albano, 2005), fidgeting with objects (Jamieson, 2005), hand, fingers and arms repetitive move patterns, hitting their head, walking back and forth (Albano, 2005); rocking their body as soon as the child can walk on its four, repetitive series of jumps on the matress and twisting moves around him-/ herself (Mureşan, 2004).

The aggressive behavior is not characteristic to autistic children, but they can sometimes exhibit auto- and heteroaggressive behaviors. They are diminished when the children learn to communicate.

Autistic children are hypersensitive to sounds, smells and visual stimuli due to disfunctional sensory intergration. Sensory integration helps the brain organize sensory inputs so as to use them, focusing on any relevant sensations and eliminating the irrelevant ones, as well as offering the necessary background for an efficient interaction with the external environment. The sensory integration deficiency occurs when the brain does not process or does not organize the range of sensory stimuli in such a manner as to offer the child concise information about the surrounding world.

Some estimation values made known many years ago on the prevalence of autism show that it occurred rarely enough (4 out of 10,000 children), but, after 1900, a series of reports suggested that autism cases increased in frequency of occurrence. The highest estimation value shows that there is one autistic child out of 166 children at birth. This major change seems to have been brought about by new environmental factors (the effects of some vaccins), but some critics explain this increase by resorting to the wide range of diagnosis and the difficulty in establishing it (Baron-Cohen, 2005; Baron-Cohen, Bolton, 1993).

In most of the cases parents give an explanatory account about the onset of the autistic disorder as occurring before the age of three years (Mureşan, 2004; DSM-IV-TR, 2003; Secară, 2007; Pawletko şi Rocissano, 2000; Lovaas, 1985, 1986 cit. Kanner, 1943). However, it is still very difficult to determine the real onset age of autism because the symptoms during the child's first year of life are harder to notice and define (Mureşan, 2004).

1.2. The Main Theoretical Approaches in Autism

Although along the history of autism there have been many scientific opinions and perspectives regarding the autistic indiviual's functioning, only three of them took shape and passed the test of time, namely: the blind mind theory (autism and the theory of mind), the central coherence theory and the cognitive disorders theory.

1.2.1 Autism and the "Theory of Mind"

The "theory of mind represents the human ability of knowing, through introspection, that he/ she has wishes, convictions, intentions and of deducing, through extension processes, that other people also have a mind of their own, that they think and they have their own convictions, wishes, emotions and intentions. In addition, he/ she is capable of generating operational hypotheses and their corresponding mental models. Using these as a functional basis, the human being will always understand and anticipate the other indiviuals' behaviors." (Baron-Cohen, Leslie, Frith, 1985; Peeters, 2009; Secară, 2007; Wellman, 1990).

The theory of mind ability comprises two major components, namely:

- Socio-perceptual – assessing mental states according to available information. This component part appears early in the child's development and it is directly linked to the subcortical and cortical sections.
- Socio-cognitive – it relies on the perceptual level, being closely connected to it. This component part corresponds to a superior level, depending on other cognitive systems such as memory and language serving social judgement measures (theory of mind), at the level of prefrontal cortical sections (Secară, 2007; Sparrevohn, Howie, 1995).

The major autistic-specific deficiencies are linked to the first component part (namely the socio-perceptual one) of the theory of mind. Autistic individuals do not manage to analyze or assess mental states by interpreting social information indices (faces, voices). These deficiencies

are closely connected to the fact that autistic persons do not think that the others' behavior is intentional and they also lack the empathizing ability as well as the ability of analysing the others' points of view. Further problems arise in the socio-cognitive component part of the theory of mind and they originate in the first component part, as cognition relies on perception (Baron-Cohen, Leslie, Frith, 1985; ;Secară, 2007; Peeters, 2009).

The level of the development of social judgement abilities can be assessed through different experimental tasks, the most well-known being the test of *unexpected location* (the Sally-Ann test) and the test of *unexpected contents* (the Smarties test).

1.2.2 The Theory of Central Coherence

"The concept of central coherence refers to the normal persons' tendency of cohesively perceiving and processing a piece of given information (context adjustment)" (Secară, 2007). A diminishing at the level of this tendency may prove to be problematic in the case of synthetical tasks, but it may also be beneficial in the case of analytical tasks.

The central coherence theory, advanced by U. Frith (1989), explains the aspects related to the autistic children's preferences for localized, partial details and not for global, general processing cognitive actions (Secară, 2007; Frith, 1989; Baron-Cohen, 2005 cit. Frith, 1989; Happe, 1996, 1997).

The autistic cognitive functioning is characterized by weak central coherence. Thus, one can explain the analytical and segmented manner of processing information, as well as the contextual information integration deficiencies and general meaning decoding (Happe, 1997; Secară, 2007; Benga, 1997).

In conclusion, there are several arguments meant to support this theory and they are related to the fact that autistic individuals cannot distinguish between contextually meaningful patterns, models and stimuli as any other person would do. This central coherence deficiency may set the limits in processing some significant stimuli or events, but it may also improve the autistic indiviual's ability of processing random stimuli. Thus, this aspect could explain the occurrence of some genius traits in the case of autistic individuals such as drawing "complex images, starting with minor, insignificant details and continuing with a step-by-step drawing approach" (Secară, 2007).

1.2.3. The Theory of Executory Disorders

The concept of ”executory functions” covers a wide range of superior cognitive processes such as work memory, anticipation, planning, impulse control, inhibition, cognitive flexibility or change adjustment ability, initiating and monitoring actions (Secară, 2007).

Cognitive functions are usually related to actions generated in the prefrontal cortex section (Secară, 2007). Many studies agree with and support this fact by emphasizing the similarity between some of the symptoms of autism and the clinical description of patients presenting acquired lesions of the forntal lobe: low cognitive flexibility, preservation tendencies, weak inhibition control, deficiencies in planning one's own actions, reduced ability of changing attention focus from one task to another (Das, Kar şi Parilla, 1996 cit. Luria şi Tsvetkova, 1990), as well as low feedback response when the feedback is asked for in a verbal, social context (Cîrneci, 2004 cit. Ozonoff, 2001).

Basically, this theory tries to explain the range of repetitive behaviors, of the strong drive for routines and of the need for ”unchange” (Ozonoff, Rogers, Farnham şi Pennington, 1994; Baron-Cohen, 2004, 2005 cit. Pennington et all, 1997, Russell, 1997a; Secară, 2007; Peeters, 2009). This perspective also explains the lack of inflexibility in the case of autistic individuals, as well as their tendency of getting stuck on a certain stimulus.

1.3 DSM-IV-TR Diagnostic Criteria

A total of six (or more) items from (1), (2) and (3), with at least two items from (1) and one item for (2) and (3):

(1) *quality regress at the level of social interaction*, rendered by at least two of the following:

(a) regress stressed during the use of numerous nonverbal behaviors, such as looking straight ahead, facial expression, body positions and gestures, in order to regulate social interaction;

(b) the inability of promoting peer relationships corresponding to the developmental level;

(c) the lack of spontaneous sharing of joy, interests and achievements (for instance, the lack of showing, bringing or specifying which are one's own objects of interest);

(d) the lack of emotional and social sharing;

(2) *quality communication regress* exhibited by at least one of the following:

(a) delay or complete lack of the development of spoken language (unaccompanied by an attempt at compensating it through alternative means of communication, such as gestures and facial expressions);

(b) in the case of individuals with appropriate language, there is a significant regress of the ability of initiating and going through a conversation;

(c) repetitive and stereotypical language use or confused language;

(d) the lack of spontaneous and varied games of pretend or of a social miming game corresponding to different development stages;

(3) *limited stereotypical and repetitive patterns of behaviors, interests and activities* manifested through one of the following:

(a) interests belonging to one or more limited patterns and stereotypical interest range, labeled as abnormal in terms of either intensity or focus;

(b) obvious inflexible adherence to certain routines and nonfunctional rituals;

(c) stereotypical and repetitive move patterns (for instance, waving or twisting one's fingers or hands or complex body moves);

(d) obsessive interests in parts of different objects.

A. Delays or abnormal functioning in the case of at least one of the following fields, with specific onset before the age of three: (1) social interaction, (2) language used in social communication or (3) imaginative or symbolic games (American Psychiatric Association, 2003).

1.4 ICD-10 Diagnostic Criteria

A. Obvious abnormal or deficient development before the age of three in at least one of the following fields:

(1) passive or expressive language used in social communication;

(2) selectively development of social attachments or reciprocal social interactions;

(3) functional or symbolic games.

B. A total of at least six active symptoms, out of which at least two from (1) and one from (2) and (3):

(1) *Quality modification of social interaction*, present in at least two of the following:

(a) failure in appropriately using the direct gaze, face expressions, body positions and gestures in order to regulate social interaction;

(b) failure in using (according to mental age and against all odds) friendships involving interest, activity and emotion sharing;

(c) the lack of socio-emotional input-output affective communication through:

- deficient or abnormal feedback to the others' emotions/ feelings;
- absence of behavioural adjustment to social contexts;
- weak integration of social, emotional and communicative behaviors;

(d) deficiency at the level of spontaneous display and drive of sharing joy, interests and new acquisitions.

(2) *Quality modification of communication*, present in at least one of the following:

(a) delay or complete absence of spoken language development unaccompanied by an attempt at compensating it through gestures or mimicry as alternative means of communication (often preceded by the absence of babbling);

(b) relative failure at the level of initiating or taking part in a conversation (disregarding the level of language acquisition), in which the ability of answering to other people's communication is present;

(c) stereotypical and repetitive use of language, as well as idiosyncratic use of words an phrases;

(d) absence of symbolic and mimcry games (in the case of young children).

(3) *Restrictive, repetitive and stereotypical patterns of behavior, interests and activities*, present in at least one of the following:

(a) obsessive interest in:

- one or more stereotypical patterns of abnormal interests from the standpoint of contents or perspective;
- one or more abnormal interests from the standpoint of intensity and nature;

(b) the apparently compulsive obsession for routine contexts or specific nonfunctional rituals;

(c) stereotypical and repetitive move patterns which involve either parts of the boy or the entire body;

(d) interests in parts of objects or in nonfunctional elements of playing items (for instance, their smell, touching the surface of items or the sounds generated by their vibrations);

(e) the clinical range of descriptors is not assignable to other pervasive developmental diorders (C. Mureşan, 2004; Brandsborg, 2002; Ingsholt, 2002).

Chapter 2

THE CHARACTERISTICS OF THE AUTISTIC CHILD

2.1 The Quality Disruption of Social Interaction

Regarding the autistic persons' ability of socially interacting within the borders of what we consider normality, one can easily mention the difficulties children are faced with when it comes to making or entering new relationships (Secară 2006, 2007 cit. Liegel 1989; Pawletco, 2002; Pawletko şi Rocissano, 2000), the absence of comprehension and external expression skills being present also at the level of nonverbal communication: visual contact, face expressions, body positions, gestures (Preda, 2005; Muraru-Cernomazu, 2005; Valente, 2004).

Moreover, autistic children wrongly "decode" social and emotional cues (Secară 2006, 2007) and they generally do not use language to transmit emotions or, if they use it, they do it at a small scale, language not being emotionally invested (Preda, 2005; 2008; Mureşan, 2004; Griffin, 2002).

From an early age, autistic children have serious learning issues related to how to usually interact with people, their main trait being the lack of social response: "to get" and "to give" (Secară, 2006; Gense şi Gense, 2002).

Melzoff and Gopnik (1993) advance early mimcry (deficient in the case of autistic chilren) as being of utmost importance in setting and developing connections between children

themselves and their environment, including the other people and the children's inner emotional experiences (Griffin, 2002).

These children can treat persons as objects, displaying limited abilities in understanding the others' feelings and emotions (Gense şi Gense, 2002, Mureşan, 2004; Valente, 2004; Ingsholt, 2002). A smile, a grimace, a wink bears no significance to them (Secară, 2006).

Pre-school autistic children lack the interest in other children (Loftin, 2005; Gense şi Gense, 2002; Secară, 2006, 2007; Pawletko şi Rocissano, 2000), being often anxious and experiencing discomfort in social contexts, not manifesting joy or satisfaction for team games and preferring game routine and rituals. The autistic children's playing is strange when compared to his/ her development stage and cognitive capacity. Thus, he/ she plays repetitively, the toys not being used according to their purpose (Secară, 2006, Gense şi Gense, 2002) and he/ she also displays weak game spontaneity and imagination. These children do not initiate pretend games, functional games being limited to hitting, twisting, spinning, aligning, smashing, smelling or licking objects (Preda, 2005, 2008; Secară, 2006; Schopler, Lansing, Waters, 1993).

Other traits of the autistic children in what concerns the abnormal development of social interaction include weak empathy abilities, the inability of staging some characters, weak ability of decoding intentional and emotional events (Mureşan, 2004; Griffin, 2002; Preda, 2005, 2008, 2010; Layartigues, Lemonnier, 2005). They do not understand that people may have other intentions, opinions, feelings and aims than their own and they do not comprehend a story including the charcaters' moods (Dahlgren, Gillberg, 1989; Mureşan, 2004; Layartigues, Lemonnier, 2005).

2.2 Communication and Language Disorders

In the case of autistic children, the particularities of the specific visual contact are early noticeable. This is either absent or disrupted (Allott, 2001; Secară, 2006, 2007; Mureşan, 2004; Griffin, 2002; Sigman, Capps, 2000; Stone, 2004). The smile or the social smile is quite rare.

The autistic children do not use symbolic gestures (babbling/ cooing in the voice pitch or the pointing gesture) or communicative gestures, and anticipatory moves are poorly rendered (they do not stretch their arms when they wish to be taken into somebody's arms).

Language disorders are a very good indicator of the autistic condition (Carr, Kemp, 1989; Juhel, 1997). Some autistic children will never develop language skills. With other autistic

children, this skill may develop naturally for a certain time stretch, stopping after a while. Others will start speaking later, around the age of 5 (Dahlgren, Gillberg, 1989; Secară, 2006, 2007; Preda, 2005, 2008; Koegel, O'Dell, Koegel, 1987). In most of the cases, language deficiency represents the absence of the socially linguistic skills (Secară, 2006, 2007; Koegel şi LaZebnik, 2004) and of their spontaneity (Chiang, 2008, Stone, 2004; Charlop şi Trasowech, 1991; Charlop şi Walsh 1986; Jones, 2007). One can identify some inchoate language elements or some echolalia language stages to which syntactic and grammar deficiencies may be added, as well as pragmatic and rhythmic language deficiencies (they do not use voice pitch and intonation to underline and reinforce the message they want to send, they can have a musical intonation, the voice is flat). They also use a mechanical language ("recorder tape"), repeating it exactly as they hear it or just inverting the pronoun (speaking about oneself by using "you" or "he"). They often use a language of their own, making their own phrases, new words or adult language (Dahlgren, Gillberg, 1989; Secară, 2006, 2007; Muraru-Cernomazu, 2005; Pawletko şi Roissano, 2000).

Autistic children are unable to understand simple instructions or questions, verbal orders or requests (Preis, 2006 cit. Prizant, 1988; Volkmar, Cohen, & Paul,1986; Watson, Lord, Schaffer, & Schopler, 1989; Wing & Gould, 1979; Pawletco, 2002), or the more complex language structures and uses: figurative language, verbal humour, irony, others' metaphors (for instance, a sarcastic remark of the type "That's just great!" will be understood as such) (Sigman, Capps, 2000; Secară, 2006, 2007; Sigman, Dijamco, Gratier, Rozga, 2004).

When regulating social interactions, gestures, face expressions, body language and emotionally charged gestures (for instance, wonder face cues) and reference gestures are missing, all of them being in disagreement with what the children say (Kristoff, Fuentes, 1991; Mureşan, 2004; Secară, 2006, 2007; Pawletko şi Rocissano, 2000; Mirenda, 2001); in some cases they can also become aggressive and angry at hearing some words.

2.3 Stereotypical, Repetitive and Limited Behaviors and Interests

The opposition to change and novelty, as well as inflexibility leads to rigid behaviors in the case of autistic children, behaviors that comprise many non-functional actions that, once fixed in the children's daily routine, are followed step by step, becoming true rituals (Gense şi

Gense, 2005; Muraru-Cernomazu 2005; Secară 2006, 2007; Valente 2004; Juhel, 1997). Routine, order and the drive to consistency in their own daily environment offer to autistic children a certain level of safety in a "chaotic" world (Secară, 2006, 2007; Pawletco, 2002; Pawletco şi Rocissano, 2000; Baron-Cohen, Allen, Gillberg, 1992).

Therefore, when a change occurs in their environment and regular lifestyle, such as redoing one's house, following an unknown path or track, putting on new clothes, using new cutlery, a family member's change of look or going places can trigger panic or anxiety attacks in the case of the autistic child (Gense şi Gense, 2002; Secară 2006, 2007; Muraru-Cernomazu, 2005; Mureşan, 2004). These panic attacks may also occur in the case of some minor changes: changing the soap or the hand towel, changing the couch coverlet, mother's new hairstyle, moving one chair from one room to another, etc.

The range of stereotypical behavior patterns is completed by anomalous motion behaviors. They comprise different move patterns, strange repetitive moves (very noticeable or subtle) such as waving their hands and fingers in front of one's face, repeated forward head or even body moves (balancing back and forth or twisting moves around oneself), tiptoeing, walking back and forth, "freezing" in a certain position. Some of them are considered to be sensory self-stimulating actions that seem to be stereotypical behaviors (Albano, 2005; Gense şi Gense, 2002; Mureşan, 2004; Muraru-Cernomazu, 2005; Secară, 2006, 2007; Valente, 2004; Pawletco, 2002; Pawletko şi Rocissano, 2000).

In the case of autistic children, the symbolic, imaginative playing misses from the range of usual children games, this being replaced by manipulative and repetitive games, the child's interest focusing on certain parts of the toys (Sigman, Capps, 2000; Mureşan, 2004; Muraru-Cernomazu, 2005): he would endlessly turn car wheels or open and close car doors, open and close drawers, spend hours aligning pill boxes or bottle caps, etc. Some autistic children can become attached to a certain object or toy (chair legs or the back part of a trailer truck or a naked doll) – they would then take these with them wherever they go, even to the bathroom.

Violent or self-aggressive behaviors are considered, by some authors, as part of stereotypical behavioral patterns as they are defensively invested (Gense şi Gense, 2002; Secară 2006, 2007; Juhel, 1997; Layartigues, Lemonnier, 2005).

2.4 Sensory Development Particularities

Apparently, the sensory development of autistic children seems to be normal: their sensory receptors, the five senses, are intact. But, their behaviors make you believe that there is a deficiency in processing the sensory inputs they get.

Famous autistic persons such as T. Gradin and Selon Ritvo described, at adult ages, their auditory system as being an amplifier that modifies its intensity and frequency according to the type of stimuli they were subjected to (Juhel, 1997; Mureşan, 2004; Layartigues, Lemonnier, 2005). The reaction to the auditory stimuli can vary from one day to another or from one stretch of time to another. For instance, they can be hyposensitive or hypersensitive to sound stimuli. Frequent sounds or noises, nothing unsual for us, may turn out to be unbearable for autistic persons. For instance, they can overreact to the sounds of the bathroom ventilation system or to the hair dryer sounds. In field research studies, researchers state that autistic children prefer high-pitched sound, even if some of them seem to be deaf (Gense şi Gense, 2002; Pawletko şi Rocissano, 2000).

Authors such as Hermelin şi O'Connor (1967; 1978) proved that, when shown certain photos, autistic children mostly looked at the background than at the figures in the photos (this observation was made by normal children). Bullinger (1989) gave an account of a series of perception anomalies with autistic children, stating that they rather use the peripheric properties of their visual system than their foveal system (Mureşan, 2004; Stone, 2004).

Autistic children can react strangely to physical sensations, such as tactile defensiveness or painful hyposensitivity (they can injure themselves badly without having any reactions).

Moreover, they can also display self-perceptive integration disorders, an aspect that can be noticed in the case of "clumsy" children, intentionally bumping into other children. In addition, during daily activities, they seem to be "dazzed" and not able to keep things in order; they have problems in learning the letters of the alphabet and different letter sizes. They have weak coordination abilities as well as strength weighing issues (problems in spontaneously stopping his/ her own moves: they cannot colour within the given patterns) and they can barely get themselves balanced again. They are "clumsy", doing things slowly and inefficiently (Secară, 2007; Layartigues, Lemonnier, 2005; Schopler, Lansing, Waters, 1993).

Hypersensitivity or hyposensitivity can affect all five senses (Juhel, 1997; Secară, 2007; Fouse şi Wheeler, 1997; Preda, 2005). In some cases, only one sense of the five will be affected,

displaying different symptoms. This is why there is no general rule for all autistic children. They are the only one able to understand their condition of being hyper- or hyposensitive to the same range of stimuli.

2.5 Motion Development

In most cases of autistic children, motion development, both complex and basic, is deficient. Since motion development plays an important part in exploring one's surroundings, in motion interactions, in physical activities, in the development of basic tool abilities (hand writing), it is advisable that therapeutic programmes should include physiotherapy (Muraru-Cernomazu, 2004; Secară, 2007; Layartigues, Lemonnier, 2005; Preda, 2008).

In the case of autistic children, the problems related to motion are noticeable as early as the age of 4-6 months: belly and back rolling problems, difficulties in keeping its body in sitting position, positional asymmetry and flabby muscle tone (Secară, 2007).

Although some autistic children have problems in completing some complex motion tasks (pole climbing, buttoning or zipping their clothes), other children may present well-developed motion abilities (using the PC at young ages, using the surround system, etc).

In addition, there is also a move coordination deficiency, positional imbalance, lack of energy and muscle strength, lax equilibrium control, lack of skills in overcoming obstacles, lax speed control, difficulty in full body coordination into one single integrated move, hypotonia, the pointer-thumb opposition, articulated speech and lax motion imitation ability (Layartigues, Lemonnier, 2005; Muraru-Cernomazu, 2005, Secară. 2007; Ingsholt, 2002).

"Graphic-motion is correlated to body stability and the reports between shoulder-elbow-radius-carpal joint. The radius-carpal wrist motion flexibility as well as finger flexibility allows the pencil to be easily handled, without using the arm or the shoulder. The aspects related to strength and hand flexibility can be noticed at pre-school age and they have to be dealt with as soon as possible by resorting to therapy. Any finger and hand activity stimulates complex-motion development." (Secară, 2007; Layartigues, Lemonnier, 2005).

There are observations related to the autistic children's writing characterized by macrography, generated, apparently, by motion coordination (Muraru-Cernomazu, 2005).

The autistic children's difficulties in motion planning (planning moves, anticipating move course and result) mark their social imitation tasks, as well as their simple, non-imitative,

goal-oriented or oro-motion tasks (Muraru-Cernomazu, 2005; Secară, 2007; Preda, 2005, 2008; Layartigues, Lemonnier, 2005).

2.6 Self and Self-image Development

Trying to explore and to learn about the surrounding world, but more than that, their about own world from the standpoint of its diversity, normal children become aware of the fact that they are the initiators of their own actions (for instance, moving their hands, fingers and legs). The Ego starts to develop when children set aims, goals and wish to acquire some assets (objects) and, in order to achieve all these, they have to make efforts to be successful (Mureşan, 2004; Layartigues, Lemonnier, 2005).

The autistic children's behavior, considered from this point of view, is a special one, pointing to an ego anomaly. The deeper the reasons for autism occurrence go and the more the child is isolated, submerged in his own world, the more the world, the child's life is non-functional, rigid, solitary, empty, flat and full of stereotypes and patterns. Avoiding visual contacts and fixed, unfocused gaze are meant to avoid perceiving new stimuli (Mureşan, 2004; ; Layartigues, Lemonnier, 2005; Sheinkopf, Siegel, 1998), "enemies" of his/ her own world, but also to avoid seeing and becoming aware of what takes place in the surrounding world. Thus, because of a degraded, reality-disrupted Ego, the child can become aggressive towards everything sourrounding him, giving up every means of communication with the external world.

2.7 Playing Traits Specific to the Autistic Child

For most children, playing is a natural phenomenon taking place in their life, promoting active participation and learning, independent performance and social inclusion (Morrison, Sainato, Benchaaban şi Endo, 2002 cit. Brewer şi Kieff, 1996; Lowenthal, 1996; Perlmutter şi Burrell, 1995). Strengthening the value of playing makes it easier to keep it in the children's life, pre-staging the success of taking part in educational environments, facilitating their access to important concepts in the fields of mathematics, literature, sciences and language.

The children that are not able to experience playing risk acquiring some deficiencies and serious problems in adjusting to pre-schooling learning environments, wherein the individualized approach and teaching techniques are limited.

Playing is significant in the child's affective and intellectual development, but also in setting the diagnosis of autism and comprehending it. Playing has to be learnt and is based on communication, interaction and setting a wide range of relationships with the other members of the social group. Because the autistic children have problems in the case of social group integration, one can state that there are certain special playing patterns. Thus, if these traits are noticed and critically assessed during the pre-verbal stage they can be important information sources in setting an early diagnosis, before the age of 4-5 years (when setting the diagnosis of autism leaves no room for doubts) (Muraru-Cernomazu, 2005; Layartigues, Lemonnier, 2005; Baker, 2001).

When functional playing is identifiable in the case of autistic children, this is focused on objects or on their own person, rarely targeting another person or a doll-like substitute. Both in the case of imaginative playing and of exploratory playing, the differences between normal children and autistic children are both qualitative and quantitative. Normally developed children, once able of performing complex, superior playing activities, will focus more on them and less on the simple playing activities. On the contrary, the autistic child will focus equally on mature playing activities (imagination games) and on simple, immature palying activities (sensory-motion exploration in a non-functional manner), preferring the latter (Muraru-Cernomazu, 2005; Layartigues, Lemonnier, 2005; Ozonoff, Cathcart, 1998).

Chapter 3
THERAPEUTIC METHODS USED IN AUTISM

The field research studies describe different therapeutic strategies and methods corresponding to the specific traits, general statements about autism and cause theories advanced so far.

As stated in the previous chapters, autism is a development disorder characterized by three main disfunctional aspects: social interaction, language and communication and behavior patterns. Therefore, the autistic child undergoes a different type of development that has to be analysed from a qualitative standpoint.

The majority of autistic persons need special treatment and care throughout their entire life, a fact which led to framing and designing special programmes, planned educational interventions based both on change-induced actions at different development levels (language and communication, personal independence and autonomy, cognitive capacity, etc.) and on actively involving the autistic children's parents and family in putting them into practice (http://www.autism-india.org/afa_aboutautism.html).

This research further presents the educational interventions that passed the test of time, displaying encouraging and positive results.

3.1 Picture Exchange Communication System (PECS)

PECS is an amplifying communication means frequently used in the case of autistic children (Bondy şi Frost, 2002; Charlop-Christy, Carpenter, Le, LeBlanc şi Kellet, 2002 cit. Bondy şi Frost, 1994; Siegel, 2000; Muraru-Cernomazu, 2005; Tincani, 2004). It is an image communication system developed for children with social communication issues (Magiati, Howlin, 2003; Charlop-Christy, Carpenter, Le, LeBlanc şi Kellet, 2002 cit. Bondy şi Frost, 1994). This system resorts to the basic behavior principles and to "shaping" techniques, to different types of reinforcement in order to develop functional image communication – it uses black-and-white or color pictographs as communication reference. The pictographs are kept by children in a special notebook ("PECS board"). The children are taught to use their own notebooks and to make a sentence by selecting pictographs (for instance, the pictograph "I want" combined with the pictograph "juice"); then they have to give the pictographs to a dialogue partner (the therapist) in order to ask what he/ she wants (expressing wishes): object or activity. Then, the child learns to express requests (asking for objects or activities that are or are not in their field of vision), to answer questions (for instance, "What do you want?") and, eventually, to make social remarks (for instance, "I see {a certain object}") (Charlop-Christy, Carpenter, Le, LeBlanc şi Kellet, 2002; Secară, 2007).

Using PECS helps develop the expressive functions of language (Secară, 2007; Charlop-Christy, Carpenter, Le, LeBlanc şi Kellet, 2002), as well as communication skills (Muraru-Cernomazu, 2005). Moreover, some studies have shown that using PECS can lead to alleviating the specific behavior disorders and to developing some positive social behaviors (Charlop-Christy, Carpenter, Le, LeBlanc şi Kellet, 2002 cit. Bondy şi Frost, 1994; Peterson, Bondy,

Vincent şi Finnegan, 1995). However, it is also emphasized that none of these explanations is backed-up by experiments and, thus, some significant factors such as the process of growing up are still unaccounted for. Since the publication of the "PECS Training Manual" in 1994, there has not been published any other pertinent research study proving the efficiency of the PECS system (Secară, 2007; Charlop-Christy, Carpenter, Le, LeBlanc şi Kellet, 2002; Magiati, Howlin, 2003).

3.2 Treatment and Education of Autistic and Communication Handicapped Children (TEACCH)

Change-induced behavior strategies are the most efficient in the case of autistic children, their efficiency level being higher if parents are involved in the entire process and if the respective strategies are initiated early in the children's development (Mukaddes, Kaynak, Kinali, Besikci şi Issever 2004 cit. Lovaas, 1987; Schreibman, 2000).

The TEACHH programme was designed by Schopler and his research partners in 1980 at the University of North Carolina. They think that the autistic chilren's parents can act as co-therapists or educators for their own children by getting involved in team work (Secară, 2007). This programme can begin at the age of 2 and it can go on throughout the entire person's life (Juhel, 1997). It can also be part of both inclusive and special education (http://www.autismweb.com/teacch.htm; Baron-Cohen, 2004; Preda, 2008).

The main tool on which the TEACHH programme focuses is education, more exactly the pedagogy of reinforcement, success and child's potential foregrounding (Juhel, 1997). It also advances the idea of building a strong skeleton-structure for the autistic child's life, guiding him/ her towards self-discipline (Muraru-Cernomazu, 2005) and a "meaningful adult life" (Larsen, 2002).

With the help of this programme, the difficulties related to social understanding, communication, concept coding and decoding, abstract thinking, spotting differences and generally imbedding cognitive processes revolve around new solutions. Both the therapists and the parents have to be creative and dynamic in their work with the children, otherwise they will face the autistic children with inflexible educational methods that will only inhibit their responses (Larsen, 2002).

Moreover, the TEACHH programme particularly emphasizes the developmental aspects of the autistic persons (Secară, 2007; Preda, 2008; Lovaas, 1987), implying that therapists should take into consideration the particularities of each developmental stage in order to properly modify autistic children's traits. These stages refer to Piaget's stages. Therefore, the needs, the deficiencies and the adjustment strategies characterizing children have to be dealt with according to their development stage and age. During young childhood, the aims of the therapeutic intervention are directly linked to the process of setting the diagnosis, parental counseling and psycho-pedagogical advice. During school age, there is a shift of focus on learning difficulties and behavior disorders. In the case of adolescence and adulthood, the aims are related to maximizing the degree of independence, autonomy and to career development (Juhel, 1997).

3.3 Applied Behavioral Analysis (ABA)

ABA is the process of systematic application of some intervention actions based on the principles of the learning theories aiming at improving significant social behaviors in a gradually increasing way (Baer, Wolf şi Risley, 1968, 1987; Hollander, Anagnostou, 2007). Particularly, ABA refers to behavior assessment and evaluation and to applying different intervention strategies in order to modify behavior (Baer, Wolf şi Risley, 1968; Muraru-Cernomazu, 2005; Hollander, Anagnostou, 2007; http://www.autismspeaks.org/what-autism/treatment/applied-behavior-analysis-aba).

Generally speaking, ABA focuses on behavior change processes, respecting the development of behavior and social adjustment abilities and reducing the occurrence frequency of undesirable behaviors. Particularly, "significant social behaviors" include academic abilities, as well as social, communicative and adjustment abilities. For instance, the ABA methods using the causes/ occurrence contexts and the consequences of certain behaviors (Muraru-Cernomazu, 2005; Sulzer-Azaroff, Mayer, 1991; Cooper, Heron, Heward, 2007) may be used in teaching new abilities and skills (language and communication, self-service skills, specific school tasks and items) (Secară, 2007; Ozonoff, Cathcart, 1998; Cooper, Heron, Heward, 2007), in generally imbedding or transferring behavior traits form one context to another (for instance, from communicating only with family members at home to communicating with school mates at school), in behavior context manipulation (for instance, changing teaching techniques in order to make the child pay attention again) or in reducing the occurrence frequency of inappropriate and

undesirable behaviors: self-aggressive behaviors or stereotypes (Cooper, Heron, Heward, 2007; Muraru-Cernomazu, 2005; Sulzen-Azaroff şi Mayer, 1991; MacKenzie, 2008; http://www.autismspeaks.org/what-autism/treatment/applied-behavior-analysis-aba).

"Discrete trial" is an ABA specific technique which makes possible complex skill and behavior acquisition by mastering some of the elements of the target skills. By using teaching techniques based on behavior analysis principles, the child will be able to gradually learn about each element of the respective ability. Once the component elements have been mastered, they are reassembled as to give a complete picture of the target ability that will thus be acquired in its complex and functional entirety (Sulzen-Azaroff şi Mayer, 1991; Hultgren cit. McEachin, 1998; Secară, 2007; Cooper, Heron, Heward, 2007; Maurice, 1996).

Acquiring each component element (or an attempt at acquiring it) includes specific instructions, a prompt (the help of an adult), the child's response and feedback. The specific instructions have to be clear in order to be properly understood by the child. Then, the child's attention is drawn by a direct prompt such as "Look at me!" followed by a more natural type of stimulus such as calling their name. Prompts are always useful and necessary, but any item or object that triggers the child's wish of anwering back may be used. They can be visual items or a simple gesture, as well as physical gestures (guiding the child's hand), the purpose being making the child answer without using the prompts (Hultgren cit. McEachin, 1998). Feedbeack has to be immediate in the case of every attempt. If the answer is not the correct one, it is ignored or there is a feedback response of the type "No!" (in the case of advanced level children). Moreover, when the answer is the correct one, it is usually accompanied by a reward (for instance, "Well done!" – social reward, or a candy or favourite toy, which is a material reward). The negative feedback or negative stimuli must not be used as they favour the risk of undesirable behavior occurrence (Secară, 2007; Maurice, 1996).

The therapy lasts between 15-40 hours/ week during several months or years, using a 1:1 teaching report.

The programmes that are based on the ABA therapy are considered to be the most efficient educational and therapeutic interventions in the case of autistic children (Secară, 2007; Cooper, Heron, Heward, 2007).

3.4 The Lovaas Programme

The early simulation Lovaas programme was developed by Ivar Lovaas, hence the name, in 1960 at UCLA (University of California, Los Angeles) (Juhel, 1997) and it uses the lifelong learning paradigm (16 hours out of 24, as long as the individual is awake). The programme is an intensive one, dealing with the child's deficiencies and his living environments, as well as his family (Juhel, 1997; Secară, 2007; Preda, 2008; Lovaas, 1987).

According to Lovaas, both teaching methods and living environments have to be adapted to the autistic child's specific needs in order to offer him/ her fair chances of social adjustment and intergration (Juhel, 1997; Preda, 2005; Ozonoff, Cathcart, 1998).

The programme tackles behavior change techniques, stimulation, behavior phasing out and moulding, reward and reinforcement, punishment, generally imbedding and securing appropriate behaviors. These techniques focus on behavior development, generalization and persistence, as well as on increasing or decreasing the behavior occurrence frequency (Juhel, 1997).

During the first year, Lovaas advances the idea of reducing the occurrence frequency of the child's aggressive and self-stimulating behaviors (Juhel, 1997; Secară, 2007). He initially acquires the basic language elements and simple behaviors (adult imitation) (Juhel, 1997; Secară, 2007). Another focus is on increasing the occurrence frequency of desirable behaviors and continuing the programme at home with the parents' help (Juhel, 1997).

The following year, the focus shifts to developing expressive language elements and social interaction skills. Moreover, the programme targets the child's behavionr in the community he/ she belongs to, aiming at integrating him/ her in the kindergarten or pre-school groups (Juhel, 1997).

Lovaas considers that in the third year the child can acquire knowledge on how to express his/ her emotions and also pre-schooling skills: reading, writing, mathematical elements and other necessary skills for integrating the child in a regular class (the first grade) (Juhel, 1997; Ozonoff, Cathcart, 1998; http://www.autisme-montreal.com/home.php?page=48.1).

Chapter 4
RESEARCH METHODOLOGY

4.1.Research Aims

1. Assessing development levels and/ or behavior disorders in the case of autistic children included in the test group, by using specific research tools.
2. Designing individualized intervention plans according to research results.
3. Assessing therapeutical intervention efficiency.

4.2. Research Hypotheses

1. Putting into practice assessment plans based on the use of specific research tools allows for intervention plans appropriate to the autistic children's needs.
2. Putting into practice individualized intervention plans incurs progress at the level of the child's psychic and behavioral development.

4.3. The Research Test Group

The current research focuses on 4 autistic children (2 girls and 2 boys) that are members of the Association of Autistic Children's Parents in Alba Iulia, at the Secondary School CRDEII Cluj-Napoca, the Seconary School "Ion Creangă" Cluj-Napoca and the Inclusive School "Liviu Rebreanu" Cluj-Napoca. The children's participation in this research respected their parents' agreement.

4.4. Description of Research Tools

The current research uses the following specific tools: the ECA III Scale, The Eric Schopler Child Autism Assessment Scale, the Early Intervention Portage Guide, Indicateurs d'observation et d'apprentissage pour enfants handicapés (*Observation and Learning Indices for Impaired Children*) and Gilliam Autism Rating Scale (GARS).

The ECA III Scale was designed in 1973 by Lelord under the name of "Bretonneau", its main aim being that of relating clinical and electro-physiological variables. The first version of this scale, Bretonneau I or ECA I started with the Duche report (1969) and it comprised 55 "yes/no" items, later on reduced to 28. The second version, Bretonneau II or ECA II listed only 18 items out of the initial 55 and they were regrouped in 6 categories, also referring to the DSM III criteria (Mureşan, 2007 cit. Garreau, 1980, Lelord, 1981).

The last and the newest version, Bretonneau III or ECA III lists 20 items that are grouped according to seven behavior patterns as follows:

- Typically autistic isolation
- Verbal and non-verbal communication disorders
- Strange reactions to environment
- Disrupted motion patterens
- Inappropriate emotional reactions
- Instinctual function disorder
- Attention, perception and intellect deficiency.

The ECA III scale is used to assess the child in his/ her own environment and to draw his/ her behavioral profile. Filling-in this scale may be done during several months, at different time intervals, the resulting graphic showing the child's evolution curve.

Each item is assessed on a scale from 0 to 4, according to the symptom occurrence frequency as follows: 0 – the disorder never occurs, 1 – it sometimes occurs, 2- often, 3- very often and 4 – permanently. Moreover, the assessor may signal some symptoms that are not listed in the scale in the "Observations" column.

Eric Schopler Child Autism Assessment Scale

The scale was initially designed by E. Schopler, R. Reichler and B. Renner in 1971, aiming at identifying autistic children and differentiating between light, moderated and severe autism.

The scale comprises 15 items as follows:

1. social relationships
2. imitation (verbal and motion)
3. emotional feedback
4. body use

5. object use
6. adjustment to change
7. visual feedback
8. auditory feedback
9. reactions to smells, tastes and pain
10. fear, anxiety
11. verbal communication
12. non-verbal communication
13. the difficulty level of activities
14. intellect level and homogeneity of intellect functions
15. overall impressions.

Each item is divided in 4 subitems with individual points ranging from 1 to 4 according to the seriousness of the item displayed symptoms.

The diagnosis category is set acoording to the individual total score and to the number of items to which the score was at least 3. The children scoring less than 30 points are non-autistic. Those that score 37 or more points and that also score 3 at 5 items are diagnosed with severe autism. The children that score 30 or more points, but do not satisfy any of the above-listed criteria are diagnosed with light or moderate autism (Mureşan, 2007).

Indicateurs d'observation et d'apprentissage pour enfants handicapés (*Observation and Learning Indices for Impaired Children*)

The list of observation and learning indices was translated and adapted by L. Şendrea (2001); the list appears in "Indicateurs d'observation et d'apprentissage pour enfants handicapés", written by the Public Education Department, France and " La Bruyére", Sion-Martiny (1986).

The indices are grouped in seven categories, the current research using only five of them, namely:

- practical autonomy/ idependence
- psycho-motion
- sensory development
- language – communication

- learning numbers and figures.

The Early Intervention Portage Guide is a scale meant to assess children aged 0-6, displaying different impairments. This scale allows for both stage development approximation and individualized intervention plans according to different development levels. The scale comprises 5 sub-scales ranging on six age levels (0-1 years, 1-2 years, 2-3 years, 3-4 years, 4-5 years and 5-6 years): language, socializing skills, self-service skills, cognitive behaviors and motion patterns/ behaviors.

The Gilliam Autism Rating Scale (GARS) was published in 1995 and it is used in diagnosing persons aged 3-22 with autism. The questionnaire has 4 sub-scales: stereotypical behaviors, communication, social interaction and development disorders totalizing 56 items, each of them describing a specifically autistic behavior according to DSM-IV and ASA (Autism Society of America).

4.5. Work Methods

The actual research, as work method, is based on the *dynamic-formatting psycho-diagnosis* taking place in three stages: *the initial assessment* (pre-testing), *the training* and *the progress assessment* (post-testing) and resulting from longitudinal case studies observed during different time intervals, namely 12 months and 8 month.

The first stage deals with the skill assessment of all the participants in the research and aims at gathering information related to their development. The research tools used in this case were the ECA III Scale, The Eric Schopler Child Autism Assessment Scale, the Early Intervention Portage Guide, Indicateurs d'observation et d'apprentissage pour enfants handicapés (*Observation and Learning Indices for Impaired Children*) and Gilliam Autism Rating Scale (GARS). They were applied individually, in appropriate contexts and environments, without disrupting factors and the time set varied accordingly.

During *the second stage*, *intervention programmes* were designed and put into practice; they were based on elements of the ABA method and environment adjustment (when necessary), as a result of initial assessment.

The therapeutic intervention plan unfolded according to the aims set at the beginning of the intervention. Respecting each aim, there were chosen a series of activities, necessary and required materials, work methods, techniques and strategies suitable to every learning situation.

The third stage refers to *progress assessment* and it is meant to monitor and set the efficiency of each intervention plan and method used in the research. This aspect was achieved by comparing the results obtained in the initial assessment to those in the progress assessment

Chapter 5

RESEARCH RESULTS AND DATA ANALYSIS

In the full version of the research paper, the current chapter comprises four longitudinal case studies, whereas the present summary will only present one.

5.1. Case Study 1

I. Personal and family data

Surname and first name: S.A

Gender: male

Birth date and place: 06th October 2006, Cluj-Napoca

Doctor's diagnosis: behavior disorders with autistic traits, moderate/ severe psychic retard, disabling epilepsy.

Family data

Father (34) and mother (39) are economists, the father also owning a car wash and the mother working in a state department branch in Cluj-Napoca.

Currently, the child's parents are divorced, the child living with his mother and grandmother from the mother's side, in a two-room flat, the socio-economic family level being medium. The grandmother takes care of A. during the day till the mother comes back home from work. The parents have a good relationship and the father often visits A., weekly or once in a fortnight.

The grandmother supports A. by playing together, going outdoors and sometimes by overprotective behaviors or even by doing things instead of letting A. do them (dressing-undressing, feeding A. – tasks that A. is perfectly able to perform). Because of these behaviors, the grandmother is emotionally blackmailed by A.

The mother-child relationship is based on shared affection, the mother fully supporting A. to grow up and to get a good education, but she is sometimes overprotective too. During their time together (mother and A.), they play and learn together. The father-child relationship is not so beneficial for the child's development, his concern for A. being limited (he asks about A.'s health), not getting too involved in the child's daily and school life. This has negative consequences especially on A.'s emotional development.

Case history

There were no problems during the pregnancy months, A. being born at 40 weeks and getting the 9 Apgar score because he did not cry right after its birth.

Everything seems normal with his development till the age of 1 year and 4 months when the mother realizes that something is not right as A. could not crouch and he also did not speak (he did not utter words such as "mother" or "father" or "water", etc.) – he was just making sounds.

At 2 years and 9 months, after being assessed by a neurologist and by a psychiatrist, A. is initially diagnosed with child autism, but, after the third convulsion crisis he is also diagnosed with epilepsy.

From that moment on, A. was subjected to medical treatment: for epilepsy: Carmazepine – he is currently still taking it; Depakim – he took it for 2 or 3 months and then doctors stopped this medication as it was not efficient for A.; Tranxene – 3 months medication with no results (he stopped taking it after 3 months).

Since 3 years and 2 month, A. has been attending kindergarten (Kindergarten No. 66, Cluj-Napoca) for 8-10 hours/ week (as long as his health allows it) under tutor surveillance. In addition, he took part in intervention and therapeutic sessions for 6-8 hours/ week (at home). These sessions were coordinated by an intervener (the same person that acted as kindergarten tutor) and the specific activities aimed at speech recovery, psycho-motion training, learning activities (in his natural environment), self-service and personal autonomy activities, neuro-sensory integration, occupational therapy – artherapy (all of them rely on the principles of the

cognitive-behavioral psycho-therapy – the ABA method). After 10 years of therapy, the intervener changed. After this change, A.'s evolution had a linear trajectory, progress still being visible.

II. Initial assessment

During initial assessment, the following tools were used: the Early Intervention Portage Guide and The Eric Schopler Child Autism Assessment Scale.

According to the *Portage Programme*, the results were the following:

1. Socializing skills: in 80% of the cases, he looks at the persons calling him by name, he enjoys the presence of family members, of the persons he knows and of other children, he easily accepts his parents leaving him at home (sometimes asking about them after they left), he initiates interactions such as taking and holding people's hand; in most of the cases, he greets when being asked to, he shows affection to people close to him and he enjoys being around children of the same age as him (he strokes their faces, he kisses them).
2. Language: language is on a lower development stage when compared to his age (the passive structures are better developed than the active ones); he relates words with gestures in order to express wishes (he asks for an object by naming it and showing it), he performs 2-3 verbal commands implying one action, he calls family members by name, he makes two-word sentences when being asked to ("go up the stairs"); he displays echolalia and verbal stereotypes (repeating nonsensical syllables "mai, tai, ui", etc.).
3. Personal autonomy: he manifests several self-service skills such as drinking water from a handled-mug and soft drinking adapter, he uses his own hand to eat small cuts of food; after eating and if asked, he uses a napkin to wipe his mouth; he does not display the skill of washing his hands (he just holds his hands under the water jet), he stretches his hands and legs to be dressed up, he uses diapers, he is reluctant to bathing and his hair being cut.
4. Cognitive capacities: he mimics simple gestures only when asked to by an adult, he distinguishes between two colours when asked to, he scribbles, he colours without respecting the outline, he inserts different shapes in their own support, he fills-in boards with various embedded shapes (6 different types) – fish, hen, dog, cat, cow, bird; he looks

for and finds books after their description, but only when asked to; he points to body parts, he recognizes himself in photos.

5. Motion development: he has balance difficulties, he walks unsupported in a peculiar way, he does not run, he has difficulties in and displays anxiety when stepping over obstacles (no matter how small they are), he goes up and down the stairs without alternatively using his legs and with help from someone else (holding the hand of an adult), he does not jump in the same spot, he claps his hands, he uses a pencil, he inserts medium-sized objects in their support, he has weak finger hold, he strings big-sized beads (4-5cm in diameter), he uses moulding clay (to make small clay balls). Moreover, A. displays motion patterns such as twisting and spinning objects, rocking his body back and forth when sitting and listening to music or to rhythmic sounds, waving his fingers in front of his eyes, stomping his feet, opening/ closing wardrobe doors and drawers, squinting at show-windows, crinkling the curtains.
6. Interests: he is interested in high-pitched sounds, even loud sounds (made by different electronical toys or by A. himself by hitting different objects), he listens to music (he hums some songs during daily activities) and he shows increased interests in computers (PCs) – he uses the PC for solving different tasks, for playing games (assisted by an adult) and for listening to music.

According to *The Schopler Child Autism Assessment*, there were the following results:

1. Interacting with people: he is willing to interact with people, especially with children of his own age, he initiates actions (by taking the others by the hand), he makes eye contact when being called by name and when being asked to; he shows affection to people close to him and to children of the same age and he loves being getting proofs of affection; he takes part in group activities and, sometimes, he may try several times before getting actually involved in solving a task; he shows anxiety and ignorance when being criticized and punished.
2. Verbal and motion imitation: verbal imitation (simple words, sentences, poems) is well-developed, occurring spontaneously; motion imitation (playing with small objects, rawing graphical signs) occurs after several demonstrative scenes.

3. Appropriate or inappropriate affective response: he shows emotions and affection to the persons dear to him and, sometimes, to strangers too; when being tired or feeling ill, he has low-intensity rage crises (he clenches his teeth and writhes and he sometimes cries hysterically).
4. Body use: he is slightly clumsy in performing tasks, he has deficient eye-motion and body coordination, light peculiar tiptoeing; he sometimes has strange body positions; he rocks his body to and fro when sitting and he displays stereotypical motion (waving his hands in fornt of his eyes, etc).
5. Object use: he is obsessively interested in round objects (twisting them in his hands), curtains, drawers, show-windows, wardrobe doors; he favours noisy toys or toys with different mechanisms; he only play when an adult is around or with an adult or other children; if the adult does not interfere, his playing is stereotypical (twisting objects, shaking show-windows, opening/ closing drawers, etc.).
6. Change adjustment: he does not display anomalous reactions (high level of excitability or increased resistance) to shifting focus of interest from one object to another, to changing objects/ tools during the same activity or to routine changes.
7. Visual responses: he makes eye-contact when he is called by name or when people talk to him (in a structured, controllable environment); he sometimes stares at a certain point for several seconds or he winks rapidly for a short period of time.
8. Sound response: he favors high-intensity sounds (pattern – he turns on different toys) and he pays attention to barely audible sounds; he favors activities based on music, he enjoys listening to music, he is startled by unexpected sounds such as starting a car, the ambulance or police car siren.
9. Smell, taste, pain response: he is hypersensitive to strong smells (perfume, food, etc.), quite nauseous; he sometimes smells different objects and persons that he comes in contact with; normal response to pain.
10. Fear, anxiety: he is fearful when the adult puts and end to his stereotypical behaviors and, sometimes, when the adult does not satisfy his whims such as opening wardrobe doors or turning on noisy toys.
11. Verbal communication: he displays echolalia (he keeps repeating various phrases an sentences he heard before without having necessarily anything to do with his current

context) and verbal patterns (illogical and nonsensical syllables); he answers sentences in one word only or by pointing to the answer (in the case of an object that is close to him); he repeats sounds and words when asked to; he uses language suitable to younger ages and characterized by limited use of words (naming an object by any other than normal name).

12. Non-verbal communication: he sometimes uses the adult's hand to express a certain behavior or just to point an object or activity; he points only the object in a certain activity (for instance, he points the potty in order to express his physical need) or he fetches an object to the adult, thus telling him/ her that he wants to play or that he wants to eat a certain type of food (for instance, he goes to the fridge, takes the yogurt and brings it to the adult in order to communicate the idea that he wants to eat yogurt).
13. Activity level
14. Intellect level and functional consistency
15. Overall impression

III. Intervention plan

The specificity of the intervention plan

The principles on which the activity ongoing relied were those of the behavioral-cogntive therapy, namely the ABA method (Applied Behaviour Analysis).

1. The concept of "individual session teaching" refers to creating a series of learning opportunities with a clearly-specified beginning and end. These sessions usually take place in short sequences, the student sitting at the desk, away from distracting factors. This type of teaching is characterized by the fact that each child is assisted by a teacher/ intervener, the programme being individualized. The usual session begins by drawing the student's attention and by presenting a certain type of instruction drill. The student is offered the chance of answering back and, if the answer is the correct one, then it is followed by reinforcement.
2. Focusing the child's attention on something is the turning point in achieving the aims of the activity tasks. The student is usually placed in an environment lacking distracting factors and his sitting position is comfortable and convenient to him. His

environment is organized in such a way as to fit the designed activities, the teaching materials and the reinforcement items. The intervener is placed so that the child could see his/ her face all the time, also offering full activity material display. The intervener can resort to playful techniques to attract the child's attention and interest, while also positioning him at the desk or he/ she can shortly pause and wait for the student to initiate eye contact. If the child does not spontaneously focus on the intervener at the beginning of the session, then the student's attention has to be drawn by resorting to other strategies. Sometimes, simply calling the child by his/ her name or saying "Pay attention!" may work. Another strategy would be showing the reinforcerment to the child.

3. Exposing "effects" – if the child answers correctly, then the reward-stimulus should be given immediately, as well as praises (social reward).
4. Individual session teaching, as well as other teaching techniques, usually involves acquiring skills under certain circumstances. This is why each skill acquired in an isolated environment, free of distracting factors has to be translated into an as naturally as possible environment. The respective skill should be present in other contexts too, contexts in which there are different persons and even slightly different instruction sets or materials (so that the translation process could take place efficiently).
5. During the intervention programme, the sequence analysis strategy was also used. Complex skills are divided into simple units that the student has to learn gradually, taking into account the fact that difficult tasks are usually solved this way. Sequence splits are helpful because the student's answers can be reinforced more often and the negative feedback generated by mistakes can thus be avoided. For instance, the ability to brush your teeth can be acquired sequentially – take off the cap of the toothpaste tube, take hold of the toothbrush, put toothpaste on the toothbrush, turn on the water, etc.
6. Certain abilities require such a simplified process named hierarchical analysis – instead of dividing some ability into a series of sequential distinct units or behaviors, one needs to acquire other basic skills. For instance, in order to name colours, the child has to be able, first of all, to distinguish them – he is taught to match identically

colored cards or objects. In order match the cards, the child has to be able to identify colours by their name – when they are also named by the teacher/ intervener ("Touch red").

7. Incurring change refers to the fact that the intervener physically and completely guides the student towards the desired behavior occurrence.
8. The prompts may be used in order to make sure that the student will answer correctly. They may be physical guiding items, written or verbal instruction sets or other auditory instruction sets, as well as specifically item placement, etc. These prompts are afterwards gradually and sequentially phased out during different activities so that the student could answer correctly only as a direct response to the intervener's instructions.
9. Gradual prompt phasing out includes stimuli modification on several levels:

- *the spatial level*, when the support-stimuli placement extends outside the work area;
- *the temporal level*, when the support-stimuli are more and more delayed, till the student is able to predict the only correct answer;
- *the morphological level*, when the shape and the nature of the stimuli are modified, phased out and almost invisible;
- *the topographical level*, when the intervener's moves or gestures are much diminished and they almost completely disappear;
- *the auditory level*, when the intensity or the volume level of a certain verbal, voiced or noverbal-auditory stimulus is modified, etc.

10. Free (unguided) answers – after the prompts are removed and the student can answer correctly, without the intervener's help, one can consider that the student is able to give free, unguided answers. The student is presented with the respective materials and he is offered the chance of giving a correct answer, an incorrect answer or of not answering at all. If the student gives an incorrect answer or if he does not answer at all, then the error correction plan comes into play and it is meant to help the student avoid future mistakes.
11. The error correction plan is simple and it allows easy access to the next activity or activity sequence, but it can also incur a pause in the respective activity, material reorganizing and student adjustment in order to correctly fulfill the task. Choosing a

certain course of action is significantly influenced by the specific task, by the error occurrence context and by the selected materials. In addition, reinforcements (the effecst/ consequences) should not be used when the answer is not correct (the activity is calmly stopped, the materials are removed and the student is back to the "initial position"; the instruction set and the prompts are delivered again, after the selected materials are back in the same place they were in the beginning of the activity).

12. Random switch refers to simultaneously practicing more skills that have already been assimilated, allowing for free, unguided answers – the intervener "switches" them by asking the student to perform different tasks in an order that cannot be predicted by him/ her.
13. Individualization process – dividing abilities into simple sequences, selecting the most appropriate reinforcements and prompts, gradually reducing them, as well as many other activity-related aspects have to be adapted to each individual's level and to the exercises at hand. The activities have to be individualized and the methodology has to be individually adjusted.

Taking part in the kindergarten activities

In agreement with the kindergarten headmistress and group kindergarten teacher, A. was included in a regular group of children, also being accompanied by a tutor. Within the group, he takes part in unguided activities and games, as well as in school/ educational activities. A. has to respect the same rules as all his other group mates. The tutor only interfered when A. had an inappropriate behavior that the kindergarten teacher had not been not trained to answer to. In agreement with the kindergarten teacher, some of the disrupting factors and stereotypical behavior triggers for A. were removed. Among these were the following: the vertical hangings were gathered at one of the two sides of the window, the wardrobes and the drawers were locked or duct-taped, round or "twistable" objects, as much as possible, were not accessible to A. (for as long as he was part of the group). Often, the other children helped A. fulfill his tasks so that A. had the chance of socially interacting with the others in various contexts and making new friends.

General and specific aims

Analyzing the results of the initial assessment and taking into account the fact that A. attends kindergarten (using the bathrooms at the same time as other children would, getting dressed and undressed around other children, sometimes eating together with other group mates), the intervention plan focused on the following aims:

- Acquiring personal autonomy
  1. acquiring all the necessary skills for getting dressed and undressed
  2. recognizing, namimg and using cutlery items
  3. acquiring the skills necessary for washing his hands
  4. recognizing and using the potty
  5. improving the abilities of correctly identifying and naming parts of the body
- Developing pshyco-motion behaviors
  1. improving finger hold
  2. improving eye-hand coordination
  3. improving hand coordination
  4. strengthening hand pressure
  5. correcting balance and motion rhythms
  6. improving abilities needed for self-service actions
- Language and communication development
  1. enriching vocabulary
  2. improving communication initiation and interaction
  3. answering questions in two-word sentences
- Phasing out stereotypical behaviors
  1. identifying and phasing out the specific triggers
  2. reducing occurrence frequency of the stereotypical behavior
  3. reducing the occurrence intensity of the stereotypical behavior
  4. replacing the stereotypical behavior with an appropriate behavior (focusing attention and getting the child involved in enjoyable activities)

<u>Intervention plan activities</u>

The intervention programme started in 2006 and it went on for two years. During this programme, there were different daily individual activities (1-1/ day), excepting the days in which A.'s health condition did not allow him to take part in the activities.

a. Developing psycho-motion behaviors

Several of the aims of the intervention plan were those of acquiring motion behaviors or skills such as: going up and down the stairs unaided, on-the-spot jumps, making a three-cube tower, colouring inside the outline, "sewing" different shapes with the help of his shoelace (ships, planes, buses, cars), "nailing" paper clips on the rim of a round bowl.

Colouring activities

At the beginning, the colouring activities took place inside moulding clay outlines in order to give the child a head start to fully become aware of the space he had to colour. Then, he coloured big-sized spaces that gradually became smaller and smaller. The selected teaching techniques were the explanation, the exercise, the live demonstration and moulding activities. Moreover, prompts were also used (mostly verbal prompts) and the rewards were the child's favorite objects, objects that were accessible to him only during the designed activities (for instance, a toy phone with different tunes, differently coloured balls). When progress was registered, the reward was offered only after an increased number of appropriate behaviors.

Gluing activities

During these activities, materials such as differently coloured crêpe paper sheets were used. Before gluing the bits of paper on a white sheet of paper (on which different shapes were beforehand drawn), A. and his intervener would crumple them in their own hands. The selected methods were the demonstration, the exercise, the explanation and the verbal indices ("Crumple", "Glue", "Press" – the crêpe paper on the white sheet of paper), as well as tactile indices. The therapist's social reward, in this case, proved to be sufficient as the activity itself represented a reward appreciated by A.

Sewing activities – sewing different shapes of different objects

With the help of a thicker shoelace that got thinner to its ends, A. was supposed to sew different object shapes: cars, ships, buses, planes. These shapes were made of wood and had wholes along their outline. At the beginning, A., with the help of the intervener (guiding), would stick and pull the shoelace in and out of the respective wholes. Verbal cues were used during

these activities (“Stick!”, “Pull out!”), as well as social reward (“Well done!”, “Excellent!”) and material rewards (after finishing sewing the entire shape, A. would play for 1 minute with the respective shape).

Paper clip handling activities

Differently coloured paper clips and a round plastic bowl were used during this activity. With te help of verbal prompts (“Hold!”, “Squeeze!” and “Put on”), guiding activities and spatial cues (A. was facing the empty part of the bowl), A. learnt to handle the paper clips and to put them on the bowl rims.

Tower building activities

Differently coloured 4cm diameter wooden cubes were used. The initial aim was changing behavior patterns. The therapist would sit behind the child, hands over the children’s own hands and they would thus build together the tower by placing one cube above the other. When progress occurred, the complete prompt (the guiding action) was phased out. The activities were gradually made more difficult, ranging from easy to difficult: from 2 to 10 cubes. At the end of each activity, the cubes were tumbled down (initially, by the therapist and then, by the child). The noise made by them was A.’s reward.

Going down and up the stairs

Exercises using a stair-high stool were practiced before actually starting to teach A. to go up and down the stairs. A., using the therapist’s hands as support, would climb and stand on the stool, facing the therapist, then turn around (the therapist changing her position according to the child’s expressed wishes – left or right) and then climb down the stool. The verbal cues were very helpful during this activity (“Climb up!”, “Turn around!”, “Climb down!”), as were the social rewards too (for instance, “Bravo!”, “Well done!”, “Excellent”, “Applause!”).

On-the-spot jump

Both guiding and verbal reward were used during the activities aiming at acquiring the skills necessary for on-the-spot jump. The child would be taken in the intervener’s arms and they would jump together.

b. Personal autonomy

Acquiring some behaviors such as using the spoon while feeding, using one-handled mugs, discarding his jacket after being unbuttoned, removing his sports shoes Velcro and using

the potty was the result of personal automony and self-service skill development, these being highly ranked in the individualized intervention plan.

Using spoons and mugs

Since yogurt is one of the child's favorite foods, using the spoon activities heavily relied on it. The child learnt to use the spoon by eating yogurt. This activity took place with the help of tactile and verbal cues ("Grasp the spoon!", "Lift the spoon!", "Put the spoon into your mouth!", etc.). Moreover, verbal reward was used too, this being very helpful in A.'s case. Once the child became accustomed to individually using the teaspoon for eating yogurt, all the other family members did the same by offering him the teaspoon and the yogurt at the same time. This behavior extended to other dishes to be eaten by using the spoon/ teaspoon.

Once the one-handled mug was introduced, the child was not offered any other type of mug, either during or after the respective learning activities.

Hand washing

In order to teach A. how to wash his hands, the intervener selected the sequential analysis strategy, the process of learning the ability being run gradually: turning on the water, hand soaking, hand soaping, hand cleansing, turning off the water tap and hand wiping. The social reward was the most frequently used.

Discarding the jacket and removing the Velcro

Both discarding the jacket after being unbuttoned and removing the sports shoes Velcro were learnt in the context of undressing and changing the shoes in order to take part in the kindergarten group activities. Change-induced behaviors and verbal prompts were used initially, the reward being his group mates (he would not enter the classroom until he achieved these two tasks). This behavior was extended to other contexts too - when he got home from the kindergarten he had to undress and take off his shoes in order to sit at his table and eat yogurt (the yogurt being the reward).

Using the potty

To learn how to use the potty, the child was initially asked frequent questions related to his physical needs (if he needed to go to the bathroom). If his anwer was "yes", then he was placed on the potty and, while sitting on it (just for urinating), he would be given his favorite toys to play with for about 30-60 seconds.

Mirror exercises

These exercises aimed at the child identifying and correctly naming parts of the body. During the first stage of the exercises, the intervener would sit behind A., both of them facing the mirror. By change-induced patterns, the intervener would take A.'s hand and touch one part of his body, naming it at the same time. During the second stage, the intervener would ask "Where is your leg?" and A. had to show it to him. Social reward and verbal cues were used.

c. Communication and language development

Learning new words

There were several activities in which the child learnt new words. He was presented with images of different objects (daily use objects: the toothbrush, the glass, the bed, the chair, the jacket, gloves, etc.), while the therapist pronounced the words at the same time. During the next stage, the child was shown the images and he was asked "What is this?" – his answer was expected afterwards. Verbal cues were used, such as the first syllable from the word naming the object in the image, as well as social and material rewards.

Playing activities

These activities involved playing with the ball ("Roll roll ball"), simple music-based activities and activities mixing games and motion elements ("The fingers' song")

d. Reducing stereotypical behaviors occurrence frequency

The strategy used for achieving this aim was environment adjustment. The stereotypical motion behavior triggers were removed as much as possible – round objects, sideway drawn vertical hangings, locked wardrobes. When rocking occurred, A. was verbally told to stop doing that and his attention was refocused on another action or activity.

In the case of verbal stereotypical behaviors, the locked mouth sign was used, as well as the verbal cue "Shhhhhhh!"

IV. Progress Assessment

The final assessment took place after 12 months since the beginning of the intervention programe. This assessment was done through the Portage Programme. According to it, the following progress occurred:

1. Socializing: he looks at the person calling him by name, he willingly gives a toy to an adult and he lets him/ her take it from him, takes part in playing activities with other children, carries a toy, mimics gestures that amuse the adults, thus consciously drawing attention on himself, gives a book to the adult to browse through it together, tries to draw somebody else's attention so that the respective person should come and see something (an object or an action), he is able to wait for satisfying his wish/ need, he respects his parents' requests in 50% of the cases, he listents to music for 5-6 minutes, he says "thank you" and "please" when asked to and he makes a choice when asked to.
2. Language: there was only little progress in this area, namely: he answers "yes" or "later" (instead of "no") when asked "yes/no" questions, he verbally asks to go to the toilet ("Pee, pee"), he recognizes more familiar objects, he indicates his age by using his fingers and he recites the nursery rhyme "Rică".
3. Personal self-service and autonomy: he uses a spoon to eat by his own, he drinks from his own mug while holding it with one hand, he sits on the potty or 5 minutes, he discards his jacket after being unbuttoned, he tells when he wants to go to the toilet, by using words and gestures, he eats on his own by using spoon and mug with minimal damage, he takes a napkin that is offered by an adult and he uses it to wipe his hands and face, he controls drooling.
4. The cognitive level: he arranges 3 cubes one after another so that it resembles a train, he finds a hidden object (usually hidden under one recipient or another), he builds a three-cube tower when asked to, he points to images about which he was previously asked, he names the objects in 4 simple images.
5. Motion development: he uses a three-cube tower, he crouches and then resumes the initial position, he jumps in the same spot, he hurls the ball to an adult standing approximately 1.60m away from him in such a manner that the adult would not be forced to move to catch the ball, he kicks the ball rolling towards him, he disjoints objects that are stuck together, he puts 5 skittles into a special support.

Moreover, A. manages to go up and down the stairs by only holding on to the railings, but not shifting his legs in stepping and he also removes his sports shoes Velcro. When asked to, he recites 2 poems of 6 lines each and sings a 5-line song in combination with motion gestures.

The occurrence-frequency of the verbal stereotypical patterns is reduced, the same being true for opening and closing wardrobe doors and drawers, crinkling hangings and rocking. The rocking behavior occurrence frequency diminished in 80% of the cases in which the trigger is also present.

V. Conclusions and recommendations

The intervention pprogramme resulted both in A.'s behavior improvement at the level of developmental skills (language and communication, socializing, motion, cognitive capacities and personal autonomy) and A.'s reduced occurrence frequency of stereotypical and socially undesirable behaviors. In addition, there was also progress in A.'s activities at the kindergarten: group or team playing activities, activities focused on acquiring academic knowledge.

Due to the fact that there has been significant progress in A.'s behavior, an intervention plan based on the ABA therapy programme is recommended, running simultaneously with a physiotherapy programme – both of them should be continuous and constant. The physiotherapy programme will be set after an initial physiotherapeutical acquisition assessment and its specific aims will focus on strengthening muscle force in the lower limbs and body coordination, as well as on improving general motion and acquiring all the necessary skills for appropriate walking and running. The suggested specific activities should be conducted in a specialized and safe environment, containing all the necessary means and resources for physiotherapeutical exercises (different medical devices, climbing frames and poles, etc.).

Working with a speech therapist specialized in autism is advisable in order to set both specific aims and directory lines of an intervention plan for communication and language development: vocabulary comprehension, phoneme pronunciation, appropriate use of voice pitch, asking for and asking question skills (functional language), narrative discourse improvement, etc.

The playing and occupational therapy activities have specific aims, motivating the child in performing daily tasks, but also revealing causal information. They are meant to help the child perform tasks at his best and they also encourage him to lead an independent life. This is why they should be used in all therapeutical programmes.

Sensory intergration activities are also recommended in the individualized intervention programme. Working with a specialist in this field is compulsory (The Ayres Classical Sensory Integration Therapy).

Both designing the new individualized intervention programme (physiotherapeutical and sensory integration aims) and case monitoring will be coordinated by a team of specialists (the speech therapist, the physiotherapist, the sensory integration therapist, parents and the intervener).

For a better and more efficient intervention programme implementation, family counseling is also recommended. Since there were problems in working with A.'s parents and in setting a clear set of rules meant to help A. recover and develop, counseling family members aimed at making them aware of their part in educating and helping A. recover and remedy his deficiencies. This does not always mean overprotection or overwhelming affection. Sometimes, as it is A.'s case, when the child has the necessary skills, he/ she only has to be given the chance of developing his/ her sense of independence, of interacting with his/ her environment without help, family members offering only back-up support and acting as mediators between the child and his/ her environment.

Chapter 6
CONCLUSIONS AND CLOSING REMARKS

Quoting professor Milea (1988), "the autistic pathology is a sum of symptoms with varied etiologies, specific to the psychic pathology of the young child. The name of the disorder comes from autism, which is the main symptom coordinating a series of other symptoms out of which the most significant ones are language disorders and stereotypical patterns of a strange and peculiar mix of both primitive, anomalous and complex means and forms of rendering psychic functions, isolated skill and either well-preserved or monstruously developed resource islands."

Some of the most relevant and basic autism diagnosis criteria are:

- symptom occurrence before the age of 30 months;

- the autistic child has a peculiar way of specifically and generally rendering his/ her ability of developing social interaction;
- language development delay related to comprehension disorders, echolalia speech and the incapacity of using the personal pronoun "I";
- his/ her behavior is marked by ritualistic and compulsive gestures and behaviors.

In the case of autistic children, shared social interaction impairment is always noticeable and constant. Significant impairments at the pragmatic level of multiple non-verbal social communication and interaction regulatory behaviors (visual contact, face expressions, body stance and gestures) might also occur.

It is a fact well-known that emotional deficiency is the result of developmental problems and it is assumed that comprehension failure of, for instance, mental condition (theory of mind) will lead to confusion and fear and, further on, to the inability of interacting with the others and to the lack of emotional attachment. Only these emotional development related aspects are deficient in the case of autistic persons while real feelings are not affected (Jordan şi Powell, 2006).

Autistic children have difficulties in understanding their own feelings and emotions, barely managing to talk about them (Albano, 2005; Mureşan, 2004; Jordan şi Powell, 1995). Parents and teachers have to be well-acquainted with the gestures and word use in the case of these children.

Communication regress is noticeable and constant, affecting both verbal and non-verbal skills (DSM-IV-TR). Verbal language is highly affected. It develops either not at all or in a delayed manner and it is affected at the level of spontaneity, starting a conversation and being a coherent dialogue partner. It could also be rigid and repetitive or it can develop as a singular, individualized type of language (the child's own words and phrases that can be understood only by the persons that are familiar with the child's individualized communication system). This individualized language is deficient at paralinguistic, grammatical and pragmatic levels. Echolalia language elements may also occur (immediate or delayed echolalia). Moreover, role play and social imitation playing (specific to age developmental stages) are absent, as well as playing meant to express moods and to understand specific needs.

Autism specialists have always designed many intervention methods and techniques mainly focused on specifically autistic disorders, but also on stereotypical, repetitive behaviors.

However, there are only several therapeutical methods that proved long-standing and efficient, as follows:

- PECS is an amplifying communication system used in the case of autistic persons, aiming at stimulating communication initiatives and at developing language. In most cases, PECS is successfully used, the autistic children progressing from the physical exchange stage (showing the adult a pictograph with what he/ she wants and the adult satisfying his/ her need) to the complex phrasing stage;
- the TEACHH programme, designed by Schopler focuses on the idea that parents can take part in the therapy as co-therapists for their own children – they are taught how to work with their children at home. The programme starts with and individualized learning programme taking into account each child's learning and developmental particularities, as well as the variety of autistic pathology. Periodic assessments take place in order to monitor progress and to adapt the aims of the individualized intervention plan. The collaboration between parents and specialists is essential for a suitable programme ongoing;
- the Lovaas programme, similarly to the TEACHH programme, is a change-induced behavior intervention plan and it uses specific change-induced behavior techniques such as behavior phasing out and alteration, reward-reinforcement relational feedback, punishment, general imbedding and securing of appropriate behaviors. These techniques focus on developing, generally imbedding or securing a certain behavior or on accordingly increasing or decreasing behavior occurrence frequency;

The ABA therapy – that we used in research - enlarges on the classical learning and functional conditioning principle advanced by Skinner. The ABA model is used for reinforcing or phasing out different types of behavior. During this type of therapeutical programme, the autistic child is dealt with individually, the acquisition of different behaviors occurring in controlled environments, free of distracting factors. General behavior imbedding is a key-concept in the ABA programmes, referring to the child's ability of transferring certain controlled-environment mastered behaviors to other daily contexts and around other persons too. The teaching activity is always individual, the programmes running for several years in a row. The results of the ABA theraphy are noticeable both in the case of autistic children and in the case of his/ her environment and family.

The present research aimed at setting the efficiency levels of each of the adjusted and individualized therapeutical programmes used in the case of autistic children. In order to achieve these aims, the work methods relied on the dynamic-formatting psycho-diagnosis running in three stages (*initial assessment/ pre-testing*, *the training session* – putting into practice and implementing the corresponding intervention programmes – and *progress assessment/ post-testing*) and achieved by longitudinal 12-months and respectively 8-months case studies.

Assessment by specifically selected tools (ECA III Scale, The Eric Schopler Child Autism Assessment Scale, the Early Intervention Portage Guide, Indicateurs d'observation et d'apprentissage pour enfants handicapés (*Observation and Learning Indices for Impaired Children*) and Gilliam Autism Rating Scale (GARS)) allowed for identifying each child's particularities, a fact which makes it easy to design appropriate and efficient intervention plans. The results of these assessments are the basis for the previously specified educational aims and selected intervention techniques within the specifically designed therapeutical programmes. Thus, hypothesis one is proved correct.

After the implementation of the adjusted and individualized intervention plans relying on specifically intervention methods in the case of autistic children, progress was noticeable at the levels of psychic development and behavior development in the case of all participants in the research. These aspects were reinforced by the results of the progress assessment, a fact which proves correct hypothesis number 2.

Therefore, correctly assessing by use of specific tools allows for individualized intervention programmes that are adapted to the atypical autistic children's development. Implementing these programmes leads to both new psychic and behavior skill acquisition and symptom occurrence frequency decrease, aspects that are dealt with in specific research studies too.

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