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A NEW PARADIGM OF PSYCHOTHERAPY CORRECTION (REHABILITATION) OF THE CHILDREN WITH SPECIAL NEEDS

The system of psychological correction of children with Down syndrome and autistic children is represented on the basis of an interdisciplinary approach and the concept of functional asymmetry of the cerebral hemispheres. It is shown that the correction of the "children of the sun" requires the intensification of the left hemisphere beginning of psychic activity, and autistic children are corrected due to activation of the right hemisphere activity with all training and therapeutically implications that emerge.

Keywords: *schizophrenia, manic-depressive psychosis, psychopathology axis, constitutional axis.*

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НОВА ПАРАДИГМА ПСИХОКОРЕКЦІЇ (РЕАБІЛІТАЦІЇ) ДІТЕЙ З ОСОБЛИВИМИ ПОТРЕБАМИ

На основі міждисциплінарного підходу та концепції функціональної асиметрії півкуль головного мозку будується система психокорекції дітей з синдромом Дауна та дітей-аутистів. Показано, що корекція "дітей сонця" передбачає активізацію лівопівкульового начала, а діти-аутисти корегується завдяки розвитку у них правопівкульового начала зі всіма терапевтично-тренінговими наслідками, що з цього випливають.

Ключові слова: *шизофренія, маніакально-депресивний психоз, психопатологічна вісь, конституціональна вісь.*

The urgency of the problem. The analysis of the data of the Ministry of Health of Ukraine shows that at present more than 50 % of schoolchildren reveal functional deviations in the activity of different systems of the organism. The data of the Institute of Pediatrics, Obstetrics and Gynecology of Ukraine reveals the situation

that only 7-10 % of the infants are born healthy. The Ministry of Education and Science of Ukraine indicate that 36 % of Ukrainian secondary school students have a low level of physical health, 34 % – lower than average, 23 % – average and only 7 % – higher than average, and 1% – high level of physical health.

Analysis of recent research and publications. So, the importance of rehabilitation and developmental work with different categories of abnormal children grows with every passing year. The theoretical aspects of the mentioned problem are presented in the studies of Ukrainian defectologists (V. I. Bondar, N. M. Goncharuk, B. B. Zasenکو, I. G. Eremenko, O. V. Romanenko, V. M. Sinyov, T. V. Sak, T. V. Skrypnyk, E. F. Sobotovich, V. V. Tarasun, V.V. Tishchenko, M.K. Sheremet, L.O. Khanseruk M.D. Yarmachenko, etc.). Actual is the experimental work of domestic and foreign defectologists, which contains data on the peculiarities of correctional learning of the children (G. I. Zharenkova, N. M. Kompanets, N. I. Korolka, N. O. Menchinskaya, N. A. Nikashina L. I. Prokhorenko, N. O. Pipina, T. D. Puskaeva, C. G. Shevchenko, etc.) [Degtyarenko, Vavina, 2008; Moiseyenko, Pedan, Berezhnyy, 2005; Social rehabilitation, 2000].

In this connection, the attempts are being made to construct a system of correctional pedagogy, which, in its integral form, would unite a plurality of psycho-correction techniques [Skrypnyk, 2012].

The purpose of the article. The conceptualization of the psycho-correction system for children with Down syndrome and autistic children appears on the agenda, being the aim of the article expressing an attempt to formulate a new paradigm of rehabilitation of the children with special needs.

The methods of research. A new paradigm of psychotherapy correction (rehabilitation) of the problems of the children with special needs is based on the concept of functional asymmetry of the hemispheres of man's cerebrum.

The scientific results and their discussion. The main aspects of the concept of functional asymmetry of the hemispheres of man's cerebrum can be presented in some basic provisions [Sperry, 1968; Springer, Deutsch, 1997].

On the level of higher psychic functions, that is, on the level of the hemispheres of man's cerebrum, we can observe the realization of the principle of holomorphy, since both hemispheres reflect and master the world in the opposite ways:

right hemisphere reflects *continuous-field* aspect of the world, forming an ambiguous polysemantic, artistic context of world view, building sacral-religious, metaphoric reality;

left hemisphere, on the contrary, reflects *discrete-substance*, plural aspect of the Universe, forming strictly one-semantic, unambiguous, abstract, discursive-theoretical world understanding, constructing rational-technocratic reality.

Functional unity of the hemispheric information processing strategies, which is found, as EEG studies indicate, in meditation state [Murphy, Donovan, 1985], enables to actualize "the moment of truth", illumination, authentic, intuitive-meditative perception of the Being, being here both single, and plural, both complex, and simple... when actually-real, on the one hand and potentially-possible, on the other, are not differentiated (which, by the way, is observed on the fundamental quantum level of the matter).

So, we have every reason to state that such a regulator is actualized on the basis of the functions of hemispheres of man's cerebral cortex, about which B. G. Anan'jev wrote as far back as sixties, and what is difficult to dispute nowadays [Anan'ev, 1963]. As appropriate experiments show, the hemispheres may be possibly considered a psycho-physiological focus of human organism, since with their functions such sides of human entity are related, as the mechanisms of aim creation and searching for the ways of achieving the aims [Simonov, 1987, p. 110], energetic and informational regulation of people's behavior [Anan'ev, 1963], empathy and reflection, extroversion and introversion, automatic and spontaneous psychic activity, first and second signaling systems, power and weakness of nervous processes, their lability and inertness, excitation and inhibition, I and non-I, ergotropic and trophotropic functions, volitional and non-volitional psychic spheres, sympathetic and parasympathetic branches of vegetative nervous system, etc. [Golubeva, 1980].

Any automatic (subconscious) action of a man is included in right hemispheric psychic activity, and non-automatic (conscious) – in left hemispheric aspects of psychic activity. It should be noted that right hemispheric strategy of perception, thinking and mastering the world represents the emotional, concrete, expressive, holistic world view which forms ambiguous poly-semantic linguistic and motivational context of reflecting reality, corresponding with the energy-field aspect of the Universe which can be characterized as continual type of matter. On the contrary, left hemispheric perception strategy represents abstract-logical, sign-symbolic, discursive, conceptual, discrete, plural world outlook which forms accurate linguistic and motivational context of reflecting the surrounding world. Such a cognitive strategy corresponds with the substance-informational aspect of the Universe which can be characterized as discrete type of matter. We may add that the right hemisphere "creates" religious-mythological, artistic reality, awaking to life such forms of social consciousness, as religion and art. The left hemisphere "creates" scientific-technocratic reality, revealing science and politics.

It should be emphasized that in onto- and phylogenesis of a living being one observes the process of gradual increasing the hemispheric asymmetry (in a baby the state of functional symmetry of cerebral cortex takes place when the hemispheres work according to the functional pattern of the right hemisphere), the greatest expression of which is reached at a mature age. Afterwards, the hemispheric asymmetry is gradually leveled. The condition for functional synthesis of hemispheres is revealed when elderly person, enriched in life experience, factually transforms himself into a child with its plastic psyche, spontaneity, frankness and openness of perception of the world.

Here we have a generally known philosophical idea about development (thesis – antithesis – synthesis) when the third stage of the development dialectically reiterates the first one, but on the higher level of development.

If we take into consideration the fact, that right hemispheric functions focus on the present time with turning to the past, and the left one – on the present time with turning to the future, then it is possible to say that a person's development moves quite naturally from past to future, and from the latter – to their integration, when spacio-temporal dichotomy of the Being is eliminated and a person liberates himself

from "*the curse of Chronos*".

On the whole, we have three major forms of comprehension of the Being according to Y.A. Urmantsev [Urmantsev, 1993] – rational (left-hemispheric), sensational (right-hemispheric) and meditative, which incorporates the first and the second forms. In the state of functional synthesis, the synchronization process of brain's hemispheres – the meditation (illumination) state displays itself [Murphy, Donovan, 1985, p. 34-40]. We can arrive at a conclusion that a person's development proceeds from sensational to rational, and from the latter to meditative form of understanding and mastering the world.

So, the goals of education and the ways of reaching them become quite understandable. First of all it is evident that the state of hemispheric harmony presupposes a sufficient developmental level of the two hemispheres. For the time being a traditional school rests mostly on the development of analytic left-hemispheric thinking, though the fact of certain underestimation of the importance of emotional and imaginative (right-hemispheric) mechanisms of psychic activity in the process of educating is acknowledged, and the experiments convince us that right-hemispheric function activation ensures a respectively significant stimulus for the development of left-hemispheric form of psychic activity [Russel, 1979, p. 55].

So, we must admit that it is urgent to work out a new paradigm of education which could provide the structural and dynamic unity of sensational-empirical and abstract-theoretical spheres, trends of personality's actualization. Special attention is to be paid to the evolutionary unfolding of the right-hemispheric aspect of a person.

The principle of continuity of psychic activity presupposes the unity of hemispheric strategies of information processing both in the sphere of synchronic, and diachronic analysis of man's evolution. That is why, the "basic" right-hemispheric aspect of a man, the development of imaginative and visual thinking, the ability in empirical generalization in a child play a very important role in an adult's life. They don't represent "the temporary stage which is to be quickly passed by and changed by a verbal-logical thinking" [Tihomirov, 1984, p. 152, 229]. The matter lies in the fact that the left hemispheric – verbal and logical – way of thinking and fathoming the world arises from the poly-semantic, metaphorical comprehension of reality. The new educational paradigm based on the concept of functional asymmetry of human brain (as well as on the spacio-temporal asymmetry of man and Universe) declares that the purpose of man's evolution lies on the ways of integration of right and left aspects of psychic activity, in the state of harmony, illumination, authentic comprehension of reality, in the framework of which the world appears to be a paradoxical ambivalent (and hence – dialectical) entity, since this state fuses into *one integral synergetic wholeness* all numerical dichotomies, correlating with psychosomatic specialization of the hemispheres, such as sensational and rational, single and plural, sublime and profane, and many other dichotomy rows, being of mutually opposite natures, which A. Maslow defined as "vectorial nature of facts and the holistic nature of values" [Maslow, 1976]. The process of this fusion is realized due to the use of synergetic paradigm in pedagogical science, embodied in *pedagogical synergetics*.

We must add that this state of integrity due to the philosophical principle of the

world's unity can be extrapolated on the whole Universe being organic oneness on its fundamental quantum level. Quantum physics shows that on the fundamental quantum level of matter there is no differentiation between cause and effect, simple and complex, linear (classical) and cyclic (holistic) types of causation, actual and potential, past and future. As V. N. Pushkin puts it, "the foundation of the matter appears to be at the same time the foundation of life and the foundation of psychics" [Dubrov, Pushkin, 1990, p. 160].

On the whole, reflective hemispheric strategies result, due to the world's unity, from general matter dichotomy of the Universe. The matter conceptually differentiates into two polar types – *substance* and *field*. The substance, having rest mass and certain structure, being a discrete-plural formation, correlates with information as plural entity in principle, reflected by the left hemisphere. The field, having no rest mass and being, as it is, motion in a pure form, is a holistic-continuous entity, correlating with energy as a measure of motion, and reflected by the right hemisphere. So, the right hemisphere can be quite justifiably named a substratum of energetic, and the left – information regulation of a man taken in all wholeness of his psycho-physiological constituents.

The analysis we have made enables to draw a scheme of polar entities of the Being based on the analysis of hemispheric strategies of world's cognition.

Table 1.

The basic scheme of polar entities of the Being

<i>RIGHT ROW OF REALITY</i>	<i>LEFT ROW OF REALITY</i>
energy-field aspect of the Universe,	substance-informational aspect of the Universe,
continual type of matter	discrete type of matter
energy	information
RIGHT HEMISPHERE	LEFT HEMISPHERE
subconscious	consciousness
mechanisms of aim creation	mechanisms of searching for the ways of achieving aim
energetic regulation of people's behaviour	informational regulation of people's behaviour
empathy	reflection
extraversion	introversion
automatic and spontaneous psychic activity	non-automatic, intentional psychic activity
first signalling systems	second signalling systems
power of nervous processes	weakness of nervous processes
lability of nervous processes	inertness of nervous processes
irritation of nervous processes	suppression of nervous processes
“non-I”, passive position	“I”, active position
ergotrophic functions	trophotrophic functions
non-volitional psychic sphere	volitional psychic spheres
sympathetic branch of vegetative nervous system	parasympathetic branch of vegetative nervous system
religious-mythological, artistic reality	scientific-theoretical, technocratic reality

religion and art as forms of social consciousness spiritual-mythological, sublime, mystical	science and politics as forms of social consciousness secular-technological, profane, analytical
spontaneity, frankness and openness of perception	rigid psyche, closed, beforehand perception
orientation to past	orientation to future
concrete-emotional, visual thinking	verbal-logical thinking
singular	plural
holistic nature of values	vectorial nature of facts
simple, holistic-continuous	complex, atomic-discrete
cyclic (holistic) type of causation, actual	linear (classical) type of causation, potential
sensational-empirical trend of personality's actualisation	abstract-theoretical trend of personality's actualisation
feminine, sensational and emotional	masculine, rational and analytical
uncertain, polysemantic linguistic and motivation context	accurate, monosemantic linguistic and motivation context
hot colour spectrum, tune	cold colour spectrum, rhythm
axiological reflection of the world	pragmatic reflection of the world
flexibility, intuition	hardness, analysis
light	darkness
unselfishness	selfishness
need	anti-need (will)
contemplation	reflection
EASTERN civilization	WESTERN civilization
misro+macro	micro versus macro
internal+external	internal versus external
somatic	psychic
development from flesh to spirit	development from spirit to flesh
instinct	intention

The concept of functional asymmetry of the hemispheres of man's cerebrum enables to realize the process of personality harmonization, which reveals a new paradigm of psychological correction (*rehabilitation*) – one of the types of psychological help (among them – psychological counseling, psychological training, psychotherapy) being the activity directed at the correction of peculiarities of the psychological development of the children with special needs not corresponding with the optimal model. This is achieved with the help of special means of psychological influence directed on formation in the person necessary psychological qualities for increasing his socialization and adaptation to changing the conditions of his life.

In general, the psychocorrection is directed at psychological influence on certain structures of person's psyche in order to ensure the full development and functioning of the personality. Psychocorrection can be realized in a variety of approaches:

due to the *psychoanalytic approach* the psychocorrectional work is aimed at the alleviating of the symptoms of internal conflicting interaction between the "I" and "It" through overcoming inadequate psychological defenses;

due to the *humanistic approach* the psychocorrection is understood as the creation of the conditions for positive personal changes: personal growth, self-actualization;

the activities approach enables to link the psychocorrection with the formation of a system of actions and a clear structuring of man's activities.

The problem of the somatic and mental health of the children is the most urgent problem of our time. In this connection, system studies aimed at developing the methodological basis of *correctional pedagogy* (one of the directions of Ukrainian pedagogy) are important. In this respect the information concept of health [Vozyuk, 2012-2016], the concept of psychocorrection of the children with autism spectrum disorders deserve attention [Skrypnyk, 2012].

The new paradigm of psychocorrection, in which new promising and effective methods of psychocorrectional work with children with Down's syndrome, as well as with autistic children are based on the concept of functional asymmetry of the human cerebral hemispheres [Bragina, Dobrohotova, 1988].

In this regard, we can also talk about three types of people (in their constitutional and psychopathological dimensions), the affective-cognitive peculiarities of whose correlate with mentioned three hemispheric strategies of cognition and development of the world.

In psychology the hemispheric dualism is reflected in a phenomenon called the "constitutional axis", whose poles are E.Krechmer opposing types – *cyclotimic* and *schizophrenic* types (asthenic and hypersthenic). It is interesting that in the notion "cyclotimic" the relation of this type of a person to the sphere of cyclic determinism is given (compare with cyclic psychoses), while the notion of "schizophrenic", that is, "being split" gives us a hint of the relation of this type of people to the sphere of classical linear (discrete) causality [Gannushkin, 1964].

These correlations in psychiatry are embodied in the notion of "psychopathological axis", which coordinates the relationship between two polar types of mental pathologies – schizophrenia and cyclic psychoses related to the functions of the hemispheres of human brain [Springer, Deutsch, 1997; Flor-Henry, 1978].

As L.S.Vygotsky put it, the schizophrenia is characterized by "emotional stupidity and coldness of affective life ... a schizophrenic form of thinking is often called symbolic, meaning that its peculiarity that it perceives nothing literally but in the allegorical way" [Vygotsky, 1984, p. 62-63]. In this regard, we can talk about the autism of the schizoids, which stems from the lack in them the "affective resonance" to other people's emotions.

It can be said that the schizophrenic is characterized by a plural, split left-hemispheric abstract-logical worldview in its extreme pathological expression, which manifests itself in the striving of a person who is under the power of this pathology, to classify everything, to schematize, to atomize the world.

The second type of pathology is characterized by extreme expression of an

integral imaginary, sensually expressive right hemispheric worldview, which manifests itself in a tendency to "totalize" everything, crystallizing the world in the form of an super-value total representation.

This understanding allows us to talk about

- 1) a split discrete-plural ("substance", linearly causal) left-hemisphere and
- 2) an integral continual-synthetic ("field", cyclic-causative, i.e. holistic) right-hemispheric types of reflection of the world in their extreme, pathological expression.

In this case, as L.S. Vygotsky wrote, "the splitting is regarded as a function equally inherent to the pathological and normal consciousness, therefore as a function is psychological one in nature, a function that is equally necessary in abstraction, with intentional attention, in the formation of the concepts, as well as in the emergence of a clinical picture of the schizophrenic process" [Vygotsky, 1984].

Similarly, the right hemispheric, holistic, continual, empathic reflection of the world has different psychological "levels" (the norm, accentuation, pathology) that in their essence have a common psycho-physiological basis. Thus, P.B. Gannushkin while describing the features of the constitutional-depressive persons, writes that behind their "sullen shell there is usually high kindness, responsiveness and the ability to understand the spiritual movements of other people; constitutional-depressive persons in close circle of loved ones and surrounded by an atmosphere of sympathy and love, become light and cheerful, talkative, even jokers and humorists, in order, however, on leaving a merry society, they take up painful digging in their spiritual wounds" [Gannushkin, 1964].

Thus, we can talk about the dichotomous structures of psychological and social phenomena, one of the most important of which illustrates the information theory of emotions P.V. Simonov, which states that emotion (as a right hemisphere phenomenon) is the result of a person's reaction to a lack of relevant information (left hemisphere phenomenon).

V.M. Dilman speaks of the three main homeostasis of the organism (energy, adaptation and regulatory) [Dilman, 1987], which, according to this author, are the cause of three "normal" diseases (hyperadaptosis, obesity, menopause) revealing the connection with three interrelated properties of the organism: the ability to reproduce (procreation), to regulate the energy flow (metabolism) and adaptation.

This triad scheme can be compared with the triadic aesthetic differentiation: symbolism, romanticism, classicism. The above dichotomies can be illustrated in *Fig. 1*, where they reveal a fractal similarity.

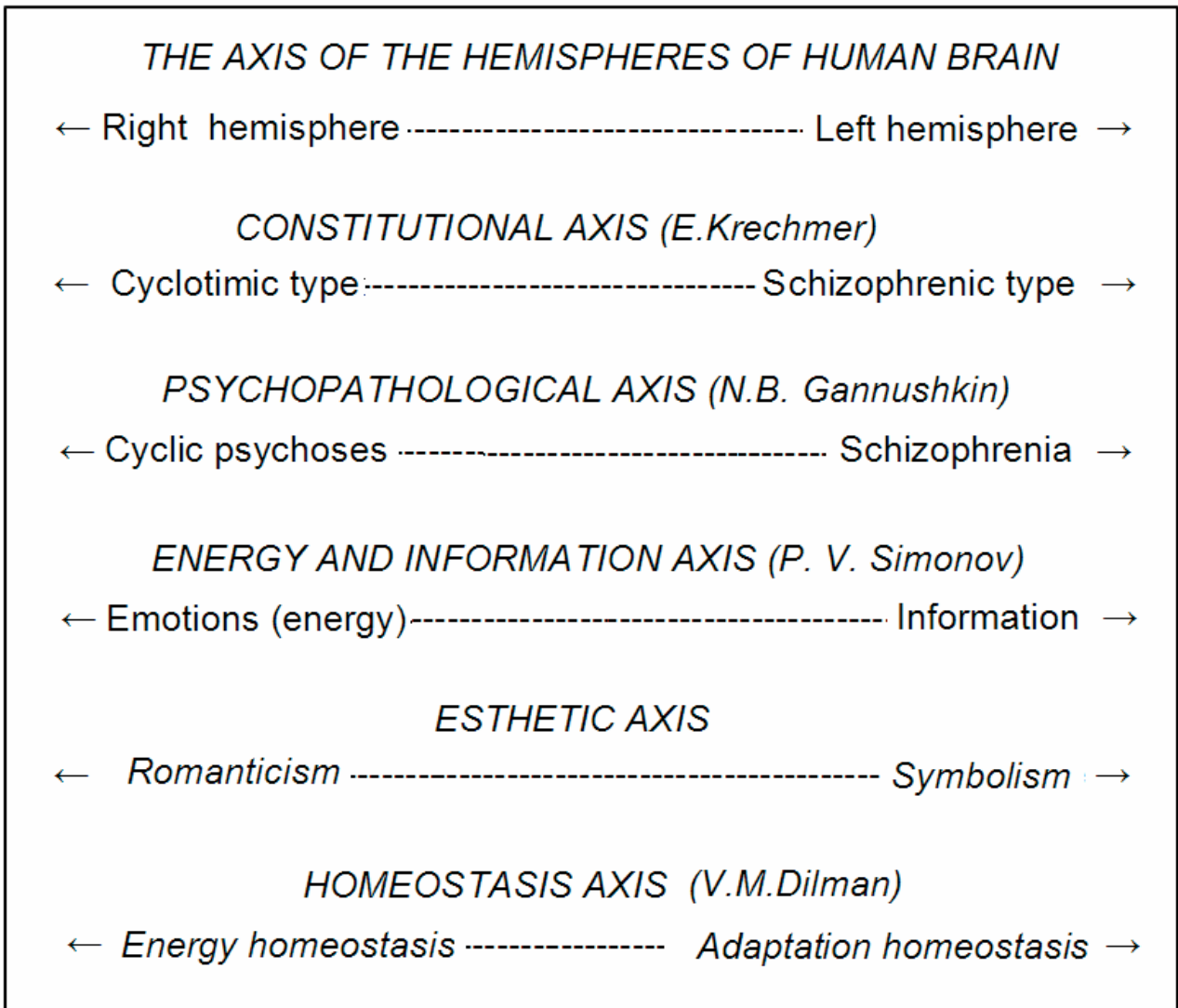


Fig. 1. The correspondence of the axes reflecting different aspects of the human being

The concept of functional asymmetry of the hemispheres, the psychopathological and constitutional axes are considered here are an important methodological basis for understanding the relationship between autistic disorders (left hemisphere phenomenon) and Down's disease (right hemisphere phenomenon), as well as the ways of their compensatory correction (rehabilitations) and even therapy, since modern studies indicate that in ontogeny the development of various functions of the organism is realized not only from the bottom up, but also from the top down, when the development of higher functions stimulates the re-building (and harmonization) of the basal ones.

Accordingly, the Down's disease, which can be considered a right hemispheric phenomenon, is corrected and cured (specialists know the rare cases of such cure) due to the development of the child's opposite left hemispheric forms of mental activity.

In this regard, let us note that in 1866 an English scientist D.L. Daun described the disease, which, among other things, manifests itself in a specific human appearance, according to which the scientist called this disease "Mongoloid idiocy", noting its "oriental" character: as the research of V.V. Arshavsky has shown, the representatives of the peoples living in the North-East regions of Eurasia are

characterised by the relatively increased right hemispheric activities [Rotenberg, Bondarenko, 1984]. That is among the nations that have activated the right-brain functions of the higher nervous activity, their cognitive function including the iconic character of their writing are determined by the right hemispheric dominance.

Conclusions. Under such conditions, the psycho-correction of the "children of the sun" presupposes the activation of the left hemispheric beginning of their psychic activity (in the form of sensory activity characterized by the left hemisphere – rhythm, cold colors, etc.), including the development of their personality beginning due to creating such socio-educational as well as training and therapeutic environment that allows the sun-child to aware itself through the development of reflection and goal formation mechanisms (the focusing on the future, that can be compared with the method of "*tomorrow's joy*" worked out by A.S. Makarenko), with the help of widening the social-role repertoire).

Children with autistic forms of life are characterized by the state of excessive rooting in left hemispheric activity. Accordingly, this problem is corrected through increasing in the "rain children" the right-hemispheric activity with all therapeutic and psychological consequences that stem from this.

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