

Research Article

Neuropsychophysiological Basis of Communicative Influence

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ABSTRACT:

The article is devoted to the communicative influence, which has a complex nature, due to the indivisible unity of the neurophysiological, psychological and linguistic components in its architectonics. The main attention is paid to the neuropsychophysiological basis of influence, where it is accented in particular on emotions as a "blocker" of critical perception of information.

It is emphasized that with the help of neuropsychophysiological processes it is possible to explain the effect of influence on the conscious and subconscious levels, the specific functioning of the hemispheres, where the effect is associated with subconscious processes and directed to the right (subdominant) hemisphere. The role of consciousness, which is almost always associated with volitional control, control of one's own psyche and behavior, as well as speech, is pointed out in the work, that is, the control function is put forward, the rational side of the person is actualized. The subconsciousness is characterized by uncontrollability, irrationality, and often "inactivated" when physiologically impossible to rationally process an array of information. It has been discovered that information subjected to subconsciousness under certain conditions is actualized and affects speech and behavioral reactions of a person, as actively used by suggestors, since the human brain can be programmed for certain actions, since the vast majority of human activity controls the subconscious.

Significant role in influencing the function of the cerebral hemispheres, whose structure consists of the left and right hemispheres, which, when processing the information in the process of cognitive activity perform various cognitive operations, but in the implementation of any mental function involved the entire brain entirely. The left hemisphere controls straightforward, logical linguistic thinking, forming a model that is easy to analyze; rights control non-verbal thinking, visual, spatial information, so-called "figurative thinking". Actually, emotions are controlled by the right (subdominant) hemisphere, on which the suggestion is oriented, establishing contact with the psychophysiological reserves of the recipient.

In the course of the study, it has been proved that in order to find out the deep foundations of communicative influence, a neuropsychophysiological component must be involved in general, which explains the specifics of conscious and subconscious processes of perception, speech comprehension, and the functioning of the cerebral hemispheres. The leading role in suggestive influence is given to the subconscious level, since the holistic sense of the message is perceived gestally. The left hemisphere processes information at the level of consciousness, rationally, right - at the subconscious level, actualizes the emotional processes, which constitute the basis of suggestive influence.

Keywords: communicative effect, neuropsychophysiological component, consciousness, subconsciousness, left hemisphere, right hemisphere.

[I] INTRODUCTION

Influence as a versatile and complex phenomenon of human existence became the object of interest of many sciences: natural, social, humanitarian, therefore, in a number of scientific fields whose representatives study the influence, the corresponding aspect of its architectonics is interpreted, which enables to study this phenomenon as deeply and thoroughly as possible, to realize the global processes and the specific conditions for its implementation, etc.

The specificity of communicative influence can be explained by taking into account the neurophysiological basis of the suggestion as its actual form, in particular, conscious / unconscious peculiarities of processes of perception of information, understanding and speech of speech, the role of the functions of the cerebral hemispheres in these processes, since the proposition correlates with the decrease of consciousness in the perception of the suggestive content (see works by G. Goncharov, V. Zazykin, T. Kovalevskaya, I. Cherepanova, etc.).

A number of scholars thoroughly investigated the components of the proposition, explaining its physiological mechanism, such as: I. Sechenov and I. P. Pavlov (conditioned reflexes, concentration of places of excitation, accompanied by negative induction and occurrence of braking places); V. Bekhterev (invasion of consciousness or implantation of an outsider's idea, which takes place without the participation of the will, attention and awareness of the recipient); B. Porshnev (version of the biological, anthropological anamnesis of the suggestion, the presence of special centers of suggestion at the level of the brain);

D. Uznadze (installation of a person as an integral factor in the perception of suggestion);

K. Pribram (functional parameters of the brain); A. Adler, S. Freud, G. Jung (deep personal subconscious level, unpredictable manifestations of the psyche), etc. [17, 38-40].

There is evidence that only 3 % of human activity controls consciousness, and the rest 97 % are

subconscious (see, for example, the works of Yu. Mironov and R. Kramar),

Therefore, when studying the neurophysiological component of the suggestion it is quite expedient to appeal to the detailed consideration of the features of consciousness and subconsciousness, the specific functioning of the hemispheres.

The purpose of the work is to consider neuropsychophysiological basis in the general architectonics of communicative influence. In the process of achieving the set goal, a number of such problems were solved:

The nature of communicative influence was considered; describes the neurophysiological and psychological basis of the phenomenon of communicative influence;

The specificity of consciousness / subconsciousness of a person is investigated; outlined the functions of the hemispheres in the organization of higher mental functions of the individual.

Object of research - the phenomenon of communicative influence; subject - neuropsychophysiological component of communicative influence.

[II] MATERIALS AND METHODS

2.1. Research material

The research material served as theoretical and experimental work of neuropsychologists, psycholinguists, hypnologists of general interest in the field of studying the phenomenon of influence.

2.2. Methodological base

The following general scientific methods are used in the work, as descriptive for highlighting the peculiarities of the specifics of the conscious / subconscious processes of the individual, various functions of the hemispheres in the process of organization of higher mental functions; methods of analysis and synthesis for identifying the components of communicative influence and combining them into a single complex; method of induction to specify general conclusions.

[III] RESULTS

3.1. Specificity of consciousness and subconscious personality

The space of the human psychic world of man has two planes - conscious and unconscious, where consciousness is "a higher level of reflection of a person of reality" [15, 113] and is characterized by activity consisting in the specificity of the reflection of reality: the information that comes to the brain is deliberately processed according to the purpose, tasks and experience of the person, and not reflected mechanically [12, 18]. In this case, consciousness is almost always associated with "volitional control on the part of man, his own psyche and behavior, as well as with speech, and without him in his higher forms does not exist" [15, 114]. Characteristic features and structural components of consciousness are: 1) knowledge of the environment, a society where the level of consciousness directly depends on the level of assimilation of knowledge and experience of the individual; 2) the allocation of man himself in the objective world as a subject of knowledge, the distinction between the subject "I" and the object "T", the opposition of myself as a person to another objective world; 3) purposefulness, planning of own activity and behavior, prediction of its results; 4) the attitude of the person to the objective reality, to other people, to himself, which is manifested in the assessment and self-criticism [12, 17-18], that is, the control function is put forward, the rational side of the personality is actualized.

The scope of consciousness does not exhaust the meaning of all mental activity, along with the perceived important place is unconscious - "a set of mental processes, operations and states, not represented in the mind of the subject" [4, 249], which "proceed in the form of reflexes, instincts, and also such processes, the emergence, content and results of which are not logically understood" [ibid], that is to the fore put forward irrationality. For the first time he drew attention to the great role of the unconscious in the psychic activity of human life, Z. Freud, pointing out that

consciousness is the tip of an iceberg that rises above the great base of the unconscious, and the role of consciousness is to organize the unconscious, distinguishing between possible from the impossible, desired from the actual, the present from the past and the future, real from the unreal. In the unconscious, the same world merges with the excitement of man, with its relation to this world, which makes it impossible to control actions and evaluate the results, that is, the actualization of the entire spectrum of emotions [5].

The scientist to the sphere of the unconscious attributed and superconscious- "the peak of the creative process, creative intuition through which" unexpected enlightenment "takes place; unconscious motives and semantic guides, determined by the personal meaning of the desired, future, etc." [there]. Characteristics of the unconscious "occur in intuitions, affections, panic, hypnosis, subliminal and involuntary perception, memorization, etc., as well as in the aspirations, feelings and actions, the excitatory causes of which are not aware of the person" [4, 251]. Thus, by causing the corresponding emotional state [22], it is possible to send the subconscious information necessary for the person who influences.

The researcher V. V. Moskalenko, describing the effect of the actual subconscious influence in general, emphasizes, that some signals "are processed by the mind unconsciously while the mind deliberately treats others. In addition, verbal messages that are transmitted and received consciously are often combined with each other and cause reactions at an unconscious level" [13, 30]. In this case, the human perception of information at the subconscious level is a significant advantage for the manipulator and danger for the recipient, since the physiological impossibility of rational processing of a large array of information contributes to emotional perception, "rejecting" it into the subconscious, which can have threatening consequences. The subconscious also "is capable of preserving excelled information that can affect human

behavior, influencing the formation of motives and actions at an unconscious level” [21, 150], which emphasizes the importance of the content of the information coming from, because excessive information, pushed into the subconscious, under certain circumstances can be actualized and has a significant impact on speech and behavioral reactions of a person.

3.2. Functions of the hemispheres

The study of the conscious / unconscious processes is closely related to the study of the features and the role of the human brain organization, the functions of the hemispheres in the organization of higher mental functions, which are embodied in numerous theoretical and experimental investigations of neuropsychologists, psycholinguists, hypnologists (G. Goncharov, S. Gorin, V. Deglin, I. Zimnaya, V. Kapran, O. Kapran, T. Kovalevskaya, O. Kotlyachkov, M. Linetsky, O. Luria, K. Sedov, Z. Freud, I. Cherepanova, T. V. Chernigovskaya, K. G. Young, etc.). As O. Kotlyachkov and S. Gorin point out, “the brain is a kind of biological computer that can be programmed for certain reactions” [10, 19], which is explained as follows: “the psyche of the recipient reacts in a certain way, perceiving the object as a set of properties that automatically arise in our consciousness, as soon as we hear or pronounce a certain name. І кожне почуття вже поєднується з відповідною психофізіологічною реакцією” [14, 32]. Thus, “suggestion is associated with the excitement of imposed reactions and inhibition of natural impulses of the central nervous system on stimuli. It significantly contradicts the first signaling system - because it prompts and dictates the body of its own sensory sphere, replacing the signals coming from the sensory-afferent block, or the reactions inherent to the effector block, and others that are called on the second signaling system. This type of influence provides the launch of unconscious programs such that the psyche and / or human physiology must find ways to fulfill the inspired tasks in the external environment” [8, 476-477], where the

recipient does not control the imposition of the outside and is confident in the independence of his actions and deeds.

M. Linetsky in this aspect points out that in the mechanism of the suggestion, three successive processes are united: 1) the direction of a program of behavior that can move from one person or community of people and is passed on to one person or many; 2) psychophysiological mechanisms of the brain that ensure the implementation of programmed behavior; 3) the output of the psycho-nervous process to the executable systems: “Behavior, perception and bodily functions become adequate to the suggestive program. Подання закінчується повторним введенням програми в дію” [11, 7] у випадку успішного, точно передбаченого ефекту.

Hypnologist G. Goncharov, studying a suggestion in the physiological aspect, qualifies it as a memorable signal of reality in the brain of a subgenot that moves on such a “route”: Engram - reverberation - consolidation, where the engram is the memory of memory [6]. The phenomenon of reverberation scientist explains as a hypothetical process, in which information received by the brain, first circulates in it - transmitted from the neuron to the neuron (“hippocampal circle”) and the brain as if captures the resulting stimuli, assigning them, already in impulse recoding, internally repeating, introducing and deploying, where the reduction is actually remembered, deployment - a reminder that occurs predominantly unconsciously, and consciousness receives only individual, ready results. The last stage - consolidation (“fixing the traces of memory”) - the transition of traces of short-term memory into a long-term due to changes in the properties (chemical or electrical) of the neurons that have been touched by the above-described colloquial signals [6]. And we can assert that in this case “alien”, outsider, imposed from the outside, information is perceived as its own. Consequently, the human brain can be programmed for certain actions, since the vast

majority of human activity controls the subconscious.

Significant role in suggestive influence belongs to the functioning of the cerebral hemispheres. In neuropsychology, the problem of interhemispheric asymmetry and interaction develops from the standpoint of the theory of systemic dynamic organization of the brain (or localization) of higher mental functions [9, 181]. The structure of the human brain consists of the left and right hemispheres, who perform various cognitive operations when processing received information in the process of cognitive activity [17, 238]. But despite the fact that different brain structures and different hemispheres perform a diverse, differentiated work, the whole brain is involved in the implementation of any mental function, the systemic nature of the brain organization of mental activity is formed [9, 181]. In this way, "every hemisphere speaks in its own language, and only a joint operation carries out a whole complex of thinking" [19, 24]. V. Kapran and A. Kapran note that the hemispheres can not be regarded as dominant in relation to a particular mental function or activity, since each hemisphere dominates the function of its own, by personal contribution to the general brain organization. Different brain hemispheres control and participate in various types of thinking [9, 182], have different ways of handling the information that comes in.

The left hemisphere is considered the center of the logical abstract and conceptual [18, 238], "scientific thinking" [21, 148], where under the control of consciousness there is a logical analysis of sign material [21, 149], local processing of information is carried out, rational comprehension of activities is carried out [19, 24], cause-effect relationships are discovered and new knowledge emerges through formal logic mechanisms [21, 148]. The function of the right hemisphere is contained in the manipulation of images, orientation in space, in distinguishing musical tones, melodies and sounds, in the recognition of complex objects (in particular, human faces), as

well as in the production of dreams and fantasies. The "left-wing" thinking is discrete and analytical, since it uses a series of sequential operations that provide a logical analysis of objects and phenomena by a certain number of signs. This creates an internal, consistent model of the world, which can be fixed and unambiguously expressed in words or symbols [1, 118]. Consequently, the information that needs logical processing is directed accordingly to the left dominant hemisphere.

However, "the information explosion in our time makes not only the left hemisphere of the brain, which processes information rationally (logically, consistently, etc.), but also the right hemisphere, whose work is based on irrational (fragmentary, incomplete information can be compiled into a definite picture even without the participation of human consciousness and eventually reflect the surroundings at least as appropriately as the left hemisphere does)" [20, 97], to which the suggestion-manipulative effect of messages is directed.

In the right hemisphere of the human brain, at the level of the subconscious, processes of assimilation of environmental facts proceed from the similarity of objects and phenomena or their adjacency [21, 148], that is, associatively. In this hemisphere, emotional subconscious processes occur at an unconscious level: the system of emotional and appraisal relationships, where our / not our, non-repulsive, beloved / not favorite, and psychological phenomena such as envy, supremacy, hostility, hatred, sympathy, love, that is, all that is beyond consciousness [7; 16, 21 ; 149] and occurs at the level of reflex reactions. The right hemisphere globally redesigns information and determines the probability of each hypothesis that characterizes the unconscious process associated with spatial perceptions and emotional motivation [19, 24]. Consequently, emotions are controlled by the right, subdominant hemisphere, which is "more closely connected with the appearance of goals, and the purpose implies the personal emotional

significance of a particular event for a person” [2, 64], which manifests the role of the dominant hemisphere in the perception of information and subsequent decision-making.

Non-linguistic functions are associated with the subdominant hemisphere, that is, it relates not to the organization of speech activity, but to complex visual (visual information) and spatial processes. The perception of spatial relations between a part and the whole is carried out by this hemisphere, which processes information without dismembering it (gestalt), to a lesser extent takes part in the implementation of complex intellectual functions, in providing complex types of motor acts, has a direct relation to perceptual processes [9, 182]. The unintentional memorization is also closely related to the right hemisphere [2, 64]. In the process of speech thinking, right and left hemispheres manage different processes: rights are concentrated on creative, intuitive and figurative thinking [18, 238]; She is the carrier of metaphorical (archaic, mythological, “complex”) consciousness; “remembers” idioms and participates in decoding metaphors, using a holistic, complex, gestalt perception [21, 148]. The figurative language that is processed by the right hemisphere is common to all peoples [2, 64], and imagery actually provides a suggestive effect and is one of the powerful methods of suggestion and hypnosis / trance.

The left hemisphere specializes in linguistic functions and takes direct part in the organization of speech activity [9, 182], that is, connected with the linguistic principles of analysis, she does not remember idioms, cannot decipher metaphors, oriented to the perception of not just new, but rationally presented information [21, 148]. Thinking of the right hemisphere (spatial-shaped) - intuitive and synthetic, since it creates the possibility of “one-moment” fixing of the numerical properties of an object in their interactions with each other and in interaction with the properties of other objects, which ensures the integrity of perception [1, 118]. It was found that

the left hemisphere is dominant, and its function is contained in verbal-sign information manipulation, as well as in reading and counting [ibid.].

K. Sedov, referring to the study of psycholinguists VL Deglin, I. O. Winter and others, notes the more complex process of functioning of the hemispheres during the speech comprehension, in which the implementation of semantic perception of the text both hemispheres begin to work from the first word. The left hemisphere “decodes” language signs, identifies words and their meanings, sentence schemes, and, on the basis of a comparison of grammatical relationships and relations between words, adapts to the abstract stereotypical meaning of the expression occurring in the posterior sections of the left hemisphere [21, 149]. In parallel with the activities of the left hemisphere on the right is an active search for the holistic sense of the perceived message (gestalt), which involves the completion of decryption, including understanding of the various figurative meanings of words, composed by winged expressions, etc. Thus, depending on the purpose of the surrogator, the corresponding messages are constructed by certain means, which respectively are oriented to the left or right-hand side perception.

[IV] DISCUSSION

Note that in the analysis of conscious and unconscious actions of the individual it is worth paying more attention to such psychological processes (taking into account the cognitive, affective and behavioral components) that determine the motives, human behavior in the process of suggestion, and also take into account the psychological laws of human perception, memorization , attracting attention. Powerful influential possibilities of emotions in combination with the specific effects of psychological laws of perception and memorization provide maximum communicative influence. But the communicative influence is a phenomenon of a complex nature, where, in

addition to the neuropsychophysiological background, there is a linguistic one, which is the main one, why we will devote attention in our further research.

[V] CONCLUSION

Thus, the left hemisphere controls straightforward, logical linguistic thinking, while rights are nonverbal thinking, visual, spatial information. These two processes work simultaneously; people do not realize the distribution of functions [9, 182]. Thanks to the strategy of the left hemisphere, “a model of the world is formed that is convenient for analysis, but based on the standards, and therefore has boundaries, due to the right hemisphere creates a living image of the world (as a result of which this contribution is associated with “figurative thinking”)” [3, 156], what active and use the suggestions, simplifying the proposed influential messages.

To summarize, we note that emotions are controlled by the right (subdominant) hemisphere, and the language and most linguistic or verbal functions - the left (dominant). Judging by the subconscious level, the suggestion is oriented to the right hemisphere, which “allows you to get in touch with the psychophysiological reserves of man” [1, 118].

Therefore, for a clear understanding of the underlying foundations of the subregister and the communicative influence, a neuropsychophysiological component that contains conscious/subconscious processes of perception, speech comprehension, functioning of the cerebral hemispheres, where the suggestive effect is given a leading role to the subconscious level, is obligatory to be involved, since the holistic meaning message is gestaltly perceived. The left hemisphere handles information rationally, at the level of consciousness, in the right (subdominant) hemisphere at the level of the subconscious, emotional processes occur where illogical comparisons work, which forms the basis of suggestive influence.

REFERENCES

1. Akhmedoy, N. I. (2005). *Prakticheskaya psikhoterapiya: [vnushenie, gipnoz, meditacziya]*. M.: AST. [In Russian].
2. Cherepanova, I. Yu. (1999). *Dom koldun`i. Yazy`k tvorcheskogo Bessoznatel`nogo*. M.: KSP. [In Russian].
3. Chesnokov, S. V., & Rotenberg, V. S. (1988). *Dva sposoba organizaczii konteksta i problema vzaimoponimaniya. Psikhologicheskie problemy` poznaniya dejstvitel`nosti. Trudy` po iskusstvennomu intellektu: uch. zap Tartus. un–ta, (793), 30-45*. [In Russian].
4. *Chto takoe bessoznatel`noe? (1998) Tajny` soznaniya i bessoznatel`nogo*. Minsk: Kharvest, 249–253.
5. Frejd Z. (1989). *Sbornik proizvedenij*. M.: Prosveshhenie. [In Russian].
6. Goncharov, G. A. (1995). *Suggestiya: teoriya i praktika*. M.: KSP. [In Russian].
7. Hammerl, M. (2000). I like it, but only when I'm not sure why: Evaluative conditioning and the awareness issue. *Consciousness and Cognition: An International Journal*, 9(1), 37-40.
8. Dzyaloshinskij, I. M. (2012). *Kommunikativnoe vozdejstvie: misheni, strategii, tekhnologii*. M.: NIU VSHE. [In Russian].`
9. Kapran, V. I., & Kapran, O. V. (2008). *Psikhologiya i razrabotka reklamnoj produkcii*. M.: Izdatel`skij cenztr «Akademiya». [In Russian].
10. Gorin, S. A., & Kotlyachkov, A. V. (2007). *Oruzhie–slovo: oborona i napadenie s pomoshh`yu slov (prakticheskoe rukovodstvo)*. M: KSP. [In Russian].
11. Lineczkij, M. L. (1988). *Vnushenie, znanie, vera. Politizdat Ukrainy*. [In Ukraine].`
12. Maksimenko, S. D. (2008). *Zagal`na psikhologi`ya. – K. Cenztr uchbovoyi li`teraturi*. [In Ukraine].

13. Moskalenko, V. V. (2007). Psikhologi`ya soczi`al`nogo vplivu. K.: Czentr uchbovoyi li`teraturi. [In Ukraine].
14. Nastin, I. V. (2007). Psikholingvistika. M.: Moskovskij psikhologo-soczial`ny`j institut. [In Russian].
15. Nemov, R. S. (1995). Psikhologiya: Ucheb. dlya studentov vy`ssh. ped. ucheb. zavedenij: V 3 kn. Kn. 1. Obshhie osnovy` psikhologii. M.: Prosveshhenie: Vlados, 496. [In Russian].
16. Olson, M. A., & Fazio, R. H. (2002). Implicit acquisition and manifestation of classically conditioned attitudes. *Social Cognition*, 20(2), 89-104.
17. Petrik, V. M., Prisyazhnyuk, M. M., & Kompanczeva, L. F. (2011). Sugestivni` tekhnologi`yi mani`pulyativnogo vplivu. Kiyiv: VI`POL. [In Ukraine]/
18. Pohepczov, G. G. (2006). Imedzhelogiya. M.: Refl-buk; K.: Vakler. [In Ukraine].
19. Psikhologiya delovy`kh otnoshenij (1998). Odessa: VMV. (Ch. I.). [In Ukraine].
20. Ri`zun, V. V., Nepijvoda, N. F., & Kornyejev, V. M. (2005). Li`ngvi`stika vplivu: monografi`ya. K.: Vidavnichopoligrafi`chnij czentr «Kiyivs`kij uni`versitet». [In Ukraine].
21. Sedov, K. F. (2011). Diskurs kak suggestiya: Irracziional`noe vozdejstvie v mezhlichnostnom obshhenii.. M.: Labirint. [In Russian].
22. Schwarz, N. (2002). Feelings as information: Moods influence judgments and processing strategies. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 534-547). New York, NY, US: Cambridge University Press.