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Consideration of clip thinking in aspect of functional asymmetry of the brain

OLENA SHESTOPALOVA, TETIANA GONCHAROVA. **Consideration of clip thinking in aspect of functional asymmetry of the brain.** *The article provides a justification for the relevance of the study of clip thinking in the aspect of functional asymmetry of the brain. Today there are significant changes in the cognitive style of perception and processing of new information by modern youth due to the active usage of various gadgets. Such changes significantly affect the peculiarities of working with educational information in applicants for secondary special and higher education. The authors give a decisive role in these changes to the factor of functional asymmetry of the brain, which depends on the features of cognitive activity in this aspect. The article analyzes modern research on this issue, in particular, the content and relationship of the concepts of "functional asymmetry of the brain" and "clip thinking". There is presented empirical study, as a result of which it was found that the activity of the right frontal part of the brain dominates in the perception of information with the majority of respondents. Also, it was found that the so-called "clip*

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thinking" is inherent in less than half of the subjects. Basing on the experimental study, there have been determined correlations between this type of thinking and the corresponding cognitive style, and the activity of the right frontal part of the brain.

Key words: *functional asymmetry of the brain, thinking, clip thinking, cognitive style, modern youth.*

Introduction. Modern scientists in the field of brain neurophysiology emphasize the changes in cognitive abilities that occur in young people due to the active use of various gadgets in the process of obtaining new information. These changes indicate the formation of a new type of thinking, namely, clip thinking. The proposed type of thinking, in the context of traditional educational models, significantly affects the educational activities of students, and accordingly, the quality of the formation of the level of professional training and others.

Assimilation of information obtained in the educational process is associated with functional asymmetry of the brain and autonomic constitution, which directly affect the organization of educational activities and mental capacity of students. They determine the features of perception, memory, the emotional sphere of man, the strategy of his thinking. Knowing the type of interhemispheric asymmetry, you can predict what difficulties may await the student during training.

But, unfortunately, in the conditions of mass education, these features of functional asymmetry are almost not taken into account. That is why we consider it appropriate and necessary to investigate which activity of the cerebral hemispheres is associated with clip thinking, and in accordance with the results to ensure compliance between the functional capabilities of the body to the requirements provided by educational institutions.

The purpose of the article is to identify the relationship between clip thinking and the activity of a part of the brain.

Task: 1. To consider features of functional asymmetry of a brain.

2. Analyze the available views on the physiological basis of clip thinking.

3. Experimentally test the assumptions about the relationship between clip thinking and the activity of a part of the brain.

Theoretical review of the research problem. First of all, it is necessary to point out the concept and functional asymmetry of the brain. In modern science, the functional asymmetry of the brain is understood as its complex property, which expresses the difference in the distribution

of neuropsychological functions between his right and left hemispheres. Functional asymmetry, according to N. N Bragina (1988), is one of the factors that determines the process of adaptation to environmental changes, susceptibility to disease, the ratio of objective and subjective indicators of health, the organization of effective work and study. According to modern neuropsychology and psychophysiology, the left hemisphere of the human brain specializes in performing verbal symbolic, right - spatial, figurative functions, which mediates the asymmetry of human mental activity. The dominance of the left hemisphere of the brain, according to O. O Andronikova (2011), is associated with high motor activity, purposefulness, rationality. A person with a more active right hemisphere is more sensitive, prone to contemplation, slow and talkative.

Consider scientific ideas about the representation of cognitive processes depending on functional asymmetry. For example, T. G. Wiesel (2005) notes that mental activity is carried out through the work of various intermodal combinations: auditory-visual, visual-tactile, tactile-olfactory, and others.

In the cognitive process, as proved in his study N. P. Rebrov (2004), the right hemisphere implements the processes of deductive thinking, while the left hemisphere mainly provides the processes of inductive thinking. Accordingly, the left hemisphere is a leader in the implementation of abstract, symbolic intellectual activity. Right - dominates the implementation of concrete-image thinking and emotional activity and processes information faster than the left. As you can see, depending on external conditions, each individual has the same potential to include in the processing of information or the right or left hemisphere. However, for the most part, there is a dominance of one of them.

According to L. S. Tsvetkova (2009), thinking is realized using functional systems located in the frontal lobes of the brain. Their significance - the implementation of analytical and synthetic activities, the removal of causal relationships, generalizations and differences in the phenomena of reality. Thanks to these parts of the brain, a person is aware of himself and his actions, programs, regulates and controls them.

B. L. Liver (2000) believes that thinking is a reflection of the peculiarities of mental processes, which depend on the type of functional organization of the cerebral hemispheres. In this regard, the scientist identifies two metastructures of cognitive activity:

1) Synoptic (from the Greek "Synopsis", which means a holistic process) style in which the dominant part of the brain, which is responsible for the

holistic perception of information. It is characterized by polyindependence, polysensitivity, arbitrariness, globality, inductance, abstractness, digital thinking, impulsiveness.

2) Ecthenic ("ectasia" - a process consisting of many specific elements) style - dominated by the left hemisphere, which is responsible for analyzing information. The style is characterized by polydependence, polysensitivity, consistency, detail, deductiveness, analysis, specificity, analog thinking, aggravation, reflectivity.

A continuation of this idea can be considered the assumptions of K. Basinger (1999) on the features of cognitive functions in combination with the activity of a part of the brain. Accordingly, the scientist identifies four main styles, each of which is due to the activity of a particular part of the brain, namely: parieto-occipital left part of the brain specializes in habitual and stereotyped thinking; parieto-occipital right part of the brain provides emotional tone, reflects and establishes harmony, including harmonious relations between people; frontal left part of the brain is associated with structural analysis, provides priorities in logical thinking and mathematics; frontal right part of the brain is associated with internal images, metaphorical thinking, imagination and expressiveness. It is this classification that we will use later in our study.

As we see, the study of thinking is still one of the most difficult problems in psychology today. The concept of higher mental functions assumes the main role of thinking, because it is a means of merging them into a single functional system. In addition, thinking is least locally represented in the brain.

Now let's move on to consider the basic concepts and theories concerning the laws and mechanisms of so-called clip thinking. It should be noted that there are still discussions among scientists and there is no consensus on the definition of this concept. Because, the most important question remains unresolved, to which mental process belongs the phenomenon of clip thinking: attention, perception, thinking, memory, consciousness, or is it a certain integrative function of short-term memory?

One of the first to initiate the study of this type of thinking was M. McLuhan (2013), which explores the problem of globalization and the development of modern information technology, proposing a new type of perception of space (visual), which replaces the traditional (acoustic). Especially important for our study is that the identified types of perception of space, the scientist tries to explain through neurophysiology, namely the binary opposition of the cerebral hemispheres. Namely, the acoustic

type, which is inherent in a society with a dominant oral communication, is associated with the right hemisphere, and visual, characteristic of a society with a developed written culture, is associated with the left hemisphere. Thus, the emergence of clip thinking is associated with the activity of the left hemisphere.

Also, among the first was the futurologist E. Toffler (2010), who identified the concept of clip thinking and "clip culture", understood it as a fragmentary-mosaic nature of ideas about the world that arise in regular consumers of audiovisual electronic information in terms of its demassification. The scientist connects the emergence of clip thinking with the development of the information society, which becomes the main form of perception, it is a natural protective reaction of the body to a large amount of information.

K.G. Frumkin continues this idea (2010), which understands clip thinking as a vector in the development of human relations with information. Characterized by the ability to quickly switch between disparate semantic fragments, but the inability to perceive long and homogeneous information.

In domestic literature, clip thinking first appears in the works of F.I. Girenko (2014), which compares it to creative thinking, which in itself cannot be systemic. That is, clip thinking is fast, fragmentary, there is a lot of emptiness, and this emptiness is the basis of freedom, mobility, creativity of each individual. The emergence of this type of thinking is inevitable, given the changes taking place in the modern world, and when a person needs to be able to respond to the large amount of information that comes to him every day.

Thus, this group of scientists explains clip thinking as a special type of relationship with information. However, the most interesting, in our opinion, is the opinion of some scientists who believe that the term "thinking" should not be combined with the term "clip", because in the so-called clip thinking, the brain operates on a shortened scheme: attention - short-term memory. The main forms of thinking: concepts - judgments - reasoning - inference are not formed by obtaining information in the form of images, fragments and short texts (G. V. Akimenko, T. M. Mikhailova, 2017; A. B. Feldman, 2014).

Thus, we assume that in the situation of operating with clip images, a person does not use mental operations related to the analytical activity of the brain. This disrupts the sequence of preservation of conscious information, because there is no deep penetration into the essence of understanding,

comprehension, evaluation, formation of attitudes to the information perceived by sensory systems. That is why scientists believe that clip thinking is more in line with the process of perception than thinking.

We find confirmation of this opinion in the interpretations of some scientists. For example, N. V. Azarenok (2009), by clip thinking means the peculiarity of a person to perceive the world through a short, bright message, embodied in the form of a video clip or TV news.

T.V. Semenovsky (2013), in turn, which interprets clip thinking as "the process of displaying many different properties of objects without taking into account the relationships between them, characterized by fragmentary information flow, high speed switching between parts, fragments of information, lack of a holistic picture perception of the world around ".

They are joined by D.A. Gorlach (2016), which understands clip thinking as a mental phenomenon characterized by a fragmentary model of information perception, in which the process of displaying objects occurs without in-depth sequential demarcation and combination, superficially and illogically, with rapid unsystematic switching.

We find a similar opinion in V. Kuznetsov (2004), who believes that the bearers of clip thinking do not need a critical assessment of the information received, because the main feature of this phenomenon is "observation instead of reasoning." That is, a person with clip thinking does not have enough strength to comprehend the flow of information, especially to know their meaning.

So, summarizing the above, the term "clip thinking" we will understand the process of perception of the laws of the world, without taking into account the relationship between them, characterized by fragmentary information flow, illogicality, complete heterogeneity of data.

As we can see, he does not have a single opinion about the psychological nature and psychophysiological basis of clip thinking. That is why the task was to conduct a pilot study to identify the relationship between clip thinking and functional asymmetry in the brain, which leads to a certain style of thinking.

Results of the research. The empirical research was carried out on the basis of Kryvyi Rih State Pedagogical University, with students of the following faculties: preschool and technological education (53 people), psychological and pedagogical (29 people), natural sciences (9 people) faculties and the Faculty of Ukrainian Philology (3 people). The total sample size was 94 people, with an average age of 21.5 years.

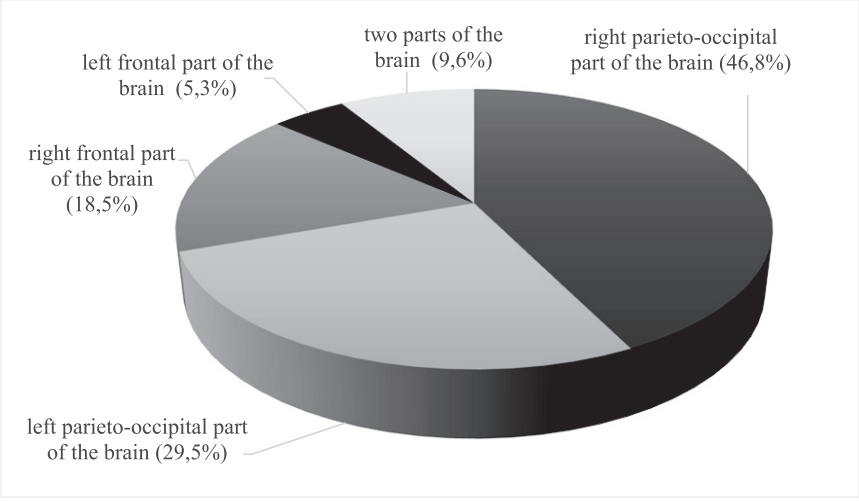

Fig.1. Distribution of the obtained data by the method of K. Basinger

Two diagnostic tools were used to establish the relationship between clip thinking and a certain type of brain activity.

The first is the method of "Assessment of thinking styles" (K. Basinger), aimed at an approximate study of the activity of different areas of the brain in a particular form of thinking ((K. Basinger, 1999). The questionnaire consists of 64 statements, to which the subject must answer to what extent they are inherent in him (in full, in part or not at all). For each of the options, a certain score is accrued, and the obtained quantitative data is used to construct a histogram that can be interpreted. The obtained diagnostic results are presented on Fig. 1.

As we can see, according to Fig. 1, the right parieto-occipital part of the brain, which provides emotional tone, harmonious development of personality and features of relationships with others, was dominant in the vast majority of subjects (46.8%). This indicates that these are creative students who have a developed intuition, attentive to others, to their intentions, feelings and non-verbal manifestations.

Also, the share of students with high activity of the left parieto-occipital part of the brain, which specializes in habitual and stereotyped, in accordance with established practice, thinking (29.5%), was sufficiently represented. These subjects have a style in which a person tends to clearly follow the instructions, constantly structure and organize information. They are very consistent in performing any actions and prefer written communication.

The right frontal part of the brain, which is associated with internal images, metaphorical thinking, imagination and expressiveness, was dominant in only 8.5% of subjects. This indicates that these students have well-developed visual-spatial functions, they are able to holistically perceive pictures, situations, things, distinguishing them from many other objects. Also, their speech is characterized by metaphors, figurative explanations.

The situation is similar to the activity of the left frontal part of the brain, which is associated with structural analysis and provides priorities in logical thinking. It appeared as the most active, only in 5.5% of subjects. These students are characterized by developed analytical skills, the ability to easily and thoughtfully make decisions and achieve goals.

It should be noted that 9.6% of the subjects found a style of interaction of the brain, the activity of which is harmoniously combined in the life of students, namely the frontal left and right parts of the brain (1.06%), left parieto-occipital and frontal parts of the brain (2.1%), left and right parieto-occipital parts of the brain (6.4%).

The second diagnostic tool is the test "Diagnosis of clip thinking" (M. B Litvinova), aimed at identifying a tendency to clip thinking in a particular person (M. B. Litvinova, 2017). The subjects are offered 30 statements and options for answers to them, from which you need to choose the most appropriate. The results are processed according to the key. The number of points indicates the presence or absence of a tendency to clip thinking. The obtained diagnostic results showed that this type of thinking is inherent in only 37% of subjects.

According to the conclusions of M. B. Litvinova (2017), people with clip thinking are characterized by fragmentary perception of information flow, operating with meanings of fixed length, mobility and multichannel perception. Also, they are characterized by high speed and dynamism of information processing, it is easy to simultaneously work with heterogeneous clip information. The description of their cognitive style emphasizes that these individuals are consciously or subconsciously prone to visualized and fragmentary perception of information from the environment. In modern conditions, they are more focused on working with gadgets, Internet resources than with a book. Accordingly, this group better perceives and understands the educational material presented in a visual, figurative format in conjunction with a short text than in a linear, consistent presentation of information. It should be noted.

To establish a connection between clip thinking and a certain type of brain activity, the study used a nonparametric Spearman criterion. The

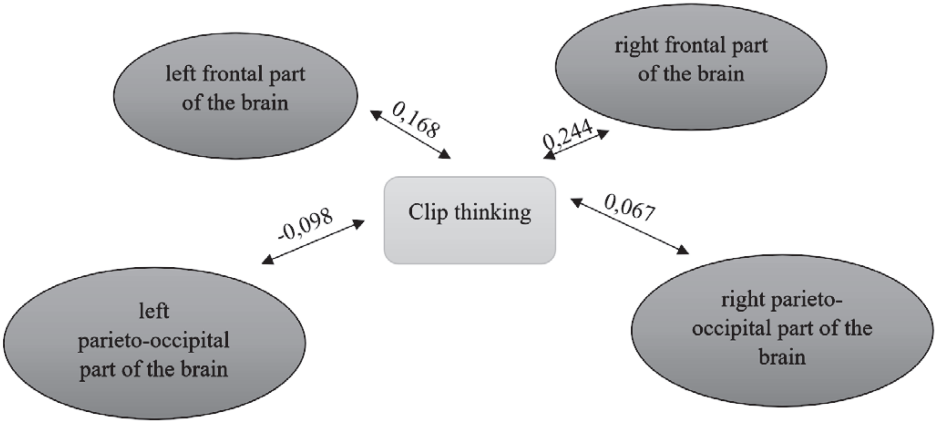

Fig. 2. Scheme of correlations between clip thinking and a certain type of brain activity

Note: correlation at the level of significance p> 0.05.

identified statistically significant relationships are presented at 0.

As can be seen from the correlation galaxy, a statistically significant relationship was established between clip thinking and the activity of the right frontal lobe of the brain (0.244). That is, clip thinking is associated with internal images, metaphorical thinking, imagination and expressiveness. Also, as noted by K. Basinger (1999), the proposed part of the brain provides rapid adaptation of man to external conditions, innovations. A person with a dominant right frontal part is attentive to new ideas, he has expressive speech, he tends to visualize, highlight the most important among the flow of a large amount of information, is able to find common ground with different people. In our opinion, these properties fully describe the type of personality, which is aimed at rapid adaptation, the creation of a certain personal image in a rapidly changing world. Certainly, this feature does not allow to penetrate deeply into the essence of phenomena and events, to analyze complex texts. Meanwhile, in social terms, such a cognitive style helps to succeed in certain areas of activity. In the works of E. Fromm presents a social type of character, which the scientist called "market-", the so-called market orientation leads to the fact that a person perceives himself as a commodity, and its value depending on the needs of the labor market or demand for certain characteristics. Then a person allegedly imitates the activities of certain specialists: "I am the way they want to see me" Such an attitude requires

superficial awareness, not real competence in a particular field. We assume that the spread of this social type of character envisaged by E. Fromm generates a cognitive style, which requires high speed in navigating the sea of information, but there is no demand for true knowledge. Part of the student youth captures the socio-psychological moods of society, in which there is a devaluation of true deep knowledge, which leads to an increasing tendency in young people to use a style of cognition, which is denoted by the concept of "clip thinking".

Conclusions. The psychological nature and psychophysiological basis of clip thinking is a rather complex and relevant interdisciplinary issue. There are a number of concepts, and more likely empirical assumptions about this problem, but there is still no consensus. As a result of empirical research, the relationship between clip thinking and the activity of the right frontal lobe of the brain was determined, which determines the ability to synthesize, quickly consider information from partial to general, indicates a tendency to perceive the current moment "here and now". These characteristics clearly intersect with the signs of clip thinking. Therefore, the obtained results are to some extent expected. However, our conclusions need further clarification, as a sufficient number of problematic issues have been left out of consideration.

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Abstracts

ОЛЕНА ШЕСТОПАЛОВА, ТЕТЯНА ГОНЧАРОВА. **Розгляд кліпового мислення в аспекті функціональної асиметрії мозку.** *У статті обґрунтовано актуальність дослідження кліпового мислення в аспекті функціональної асиметрії головного мозку. Сьогодні відбуваються суттєві зміни у когнітивному стилі сприймання та опрацювання нової інформації у сучасної молоді унаслідок активного використання різноманітних гаджетів. Саме такі зміни суттєво впливає на особливості роботи із навчальною інформацією у здобувачів середньо-спеціальної та вищої освіти. Вирішальну роль у цих змінах автори надають чиннику функціональній асиметрії головного мозку, від якого залежать особливості пізнавальної активності в зазначеному аспекті. У статті проаналізовано сучасні дослідження з вказаної проблематики, зокрема зміст та співвідношення понять «функціональна асиметрія мозку» та «кліпове мислення». Представлено результати емпіричного дослідження, в результаті якого було виявлено, що у більшості респондентів домінує активність правої лобової частини мозку, при сприйманні інформації. Також, виявлено, що так зване «кліпове мислення» властиве меншій, ніж половині досліджуваних. Встановлено статично-значущий зв'язок між цим типом мисленням та відповідним когнітивним стилем, та активністю правої лобової частини головного мозку.*

Ключові слова: *функціональна асиметрія мозку, мислення, кліпове мислення, когнітивний стиль, сучасна молодь.*

ЕЛЕНА ШЕСТОПАЛОВА, ТАТЬЯНА ГОНЧАРОВА. **Рассмотрение клипового мышления в аспекте функциональной асимметрии мозга.** *В статье обоснована актуальность исследования клипового мышления в аспекте функциональной асимметрии головного мозга. Сегодня происходят существенные изменения в когнитивном стиле восприятия и обработки новой информации, у современной молодежи, вследствие активного использования различных гаджетов. Именно такие изменения существенно влияют на особенности работы с учебной информацией у получающих средне-специальное и высшее образования. Решающую роль в этих изменениях авторы придают фактору функциональной асимметрии головного мозга, от которой зависят особенности познавательной активности в указанном аспекте. В статье проанализированы со-*

временные исследования по указанной проблематике, в том числе, сущность и соотношение понятий «функциональная асимметрия мозга» и «клиповое мышление». Представлены результаты эмпирического исследования, в результате которого было выявлено, что у большинства исследуемых студентов преобладает активность правой лобовой части мозга, при восприятии информации. Так же, ввыявлено, что так называемое «клиповое мышление» свойственно менее, чем половине испытуемых. Установлено статически значимую связь между этим типом мышления и соответствующим когнитивным стилем, и активностью правой лобной части головного мозга.

Ключевые слова: *функциональная асимметрия мозга, мышление, клиповое мышление, когнитивный стиль, современная молодежь.*

OŁENA SZESTOPAŁOWA, TETIANA HONCZAROWA. **Analiza myślenia klipowego w aspekcie asymetrii funkcjonalnej mózgu.** *W artykule uzasadniono aktualność badania myślenia klipowego w aspekcie asymetrii funkcjonalnej mózgu. Obecnie w poznawczym stylu percepcji i przetwarzania nowych informacji u współczesnej młodzieży zachodzą znaczące zmiany, spowodowane aktywnym wykorzystywaniem różnych gadżetów. Takie zmiany znacząco wpływają na specyfikę pracy z informacjami edukacyjnymi u kandydatów na średnie kształcenie specjalne i wyższe. Decydującą rolę w tych zmianach autorzy przypisują czynnikowi funkcjonalnej asymetrii mózgu, od którego zależą cechy aktywności poznawczej w danym aspekcie. Artykuł analizuje współczesne badania dotyczące danego zagadnienia, w tym treść i związek pojęć „funkcjonalna asymetria mózgu" i „myślenie klipowe". Przedstawiono wyniki badania empirycznego, w wyniku którego stwierdzono, że u większości badanych w percepcji informacji dominuje aktywność prawego płata czołowego mózgu. Stwierdzono również, że tak zwane „myślenie klipowe" jest charakterystyczne dla mniej, niż połowy badanych. Odnotowano statystycznie istotny związek między tym sposobem myślenia a odpowiadającym mu stylem poznawczym, a aktywnością prawego płata czołowego mózgu.*

Słowa kluczowe: *funkcjonalna asymetria mózgu, myślenie, myślenie klipowe, styl poznawczy, współczesna młodzież.*