

# On the issue of objective diagnosis of dissociative identity disorder in the practice of forensic psychiatry

## Abstract

The article presents the possibilities of a new method of neurophysiological research in forensic psychiatry – the variance of the amplitude-frequency characteristics of the alpha rhythm of the EEG on the example of a dynamic study of a patient with dissociation of personality identification.

**Keywords:** dissociative identity disorder, electroencephalography, DAFCAR, forensic psychiatry

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**Abbreviations:** DID, dissociative identity disorder; DAFCAR, dispersion of the amplitude-frequency characteristics of the alpha rhythm; EEG, a new method of neurophysiological research; NGNB, neural-glial network of the brain; EEG, electroencephalography

## Introduction

In the conditions of the developing information revolution, which is accompanied by a surge of mental instability of society, which is accompanied by an increase in violent crimes of various scales: shooters shooting children in schools; airbus pilots ruining their passengers in terrible disasters; politicians involving the populations of entire countries in terrible wars? There is an urgent need for effective counteraction to mental disorders and their timely detection.

The modern system of prevention of deviant behavior of people is currently revealing its inconsistency.<sup>1-4</sup> The reason for it is the lack of an adequate understanding of the mechanisms of human mental activity, associated with an outdated paradigm in neurophysiology and psychology, entailing the helplessness of psychiatry.<sup>5</sup> Figuratively speaking, psychiatry has come to the state of a medieval system of providing medical care to psychiatric patients, but at a higher evolutionary level, where chemical means of restricting freedom are used instead of shackles.

This state of affairs leads to the fact that some types of psychopathology are generally denied due to the inability to explain them and objectively prove their presence or absence in the sub-expert. One of such mental states is dissociative identity disorder.<sup>6,7</sup>

Dissociative identity disorder (DID), or multiple personality disorder, is a mental disorder characterized by the presence of two distinct and relatively stable personality states. It is accompanied by memory changes with temporary amnesia and differs sharply from ordinary forgetfulness.<sup>8</sup>

Most often, these conditions appear alternately in patients and are usually combined with post-traumatic syndrome due to mental and mechanical injuries, most often registered in early childhood. Possible connection with the use of psychoactive substances, as well as in the treatment of epilepsy.<sup>9</sup> Scientists became seriously interested in this disease, which was registered back in the 19th century under the name “sleepwalking” in the 20th century, since it often arose as a result

of post-traumatic stress disorder in combat veterans. However, the diagnosis and treatment of these conditions since 1908, she has already been in touch with schizophrenia, a mental condition introduced into the practice of psychiatry by Eugen Bleuler.

DID, or as it was called “split personality” has always aroused the interest of lawyers and forensic psychiatrists, because its diagnosis is so complex and contradictory, and the clinical picture is so bizarre that it usually arouses suspicion of simulation. That is why, from 1903 to 1978, the number of registered cases of DID decrease - most likely they began to be attributed to schizophrenia. However, in the public consciousness, the mystery of this phenomenon has found expression in works of art, the most famous of which are. “Frankenstein” by Mary Shelley, “The Strange Story of Dr. Jekyll and Mr. Hyde” by Robert Louis Stevenson and many stories by Edgar Allan Poe. However, interest in this disease re-emerged in connection with the declaration of innocence by reason of insanity and the first was successfully used in an American court in 1978 in the case of Ohio v. Milligan.<sup>10</sup>

The diagnosis of DID is still based on subjective psychiatric surveys using scales of standard assessments of mental state, such as MMPI-2, but the reliability of these studies is quite low due to the fact that the true cause and mechanism of this disease in modern psychiatry is unclear.

## Material and methods

At the same time, at present, on the basis of new data in the field of neurophysiology, using methods of non-epileptic electroencephalography and, in particular, dispersion analysis of the amplitude-frequency characteristics of the alpha rhythm,<sup>11,12</sup> new data on the mechanisms of formation of not only psychopathology,<sup>2</sup> [8], but also deviant behavior in general have appeared.<sup>13-15</sup> This method allows you to track neurophysiological changes with great accuracy in long-term dynamic observation. It was with the help of this technique that it was possible to study some neurophysiological characteristics of BITS and the mechanisms of its occurrence.

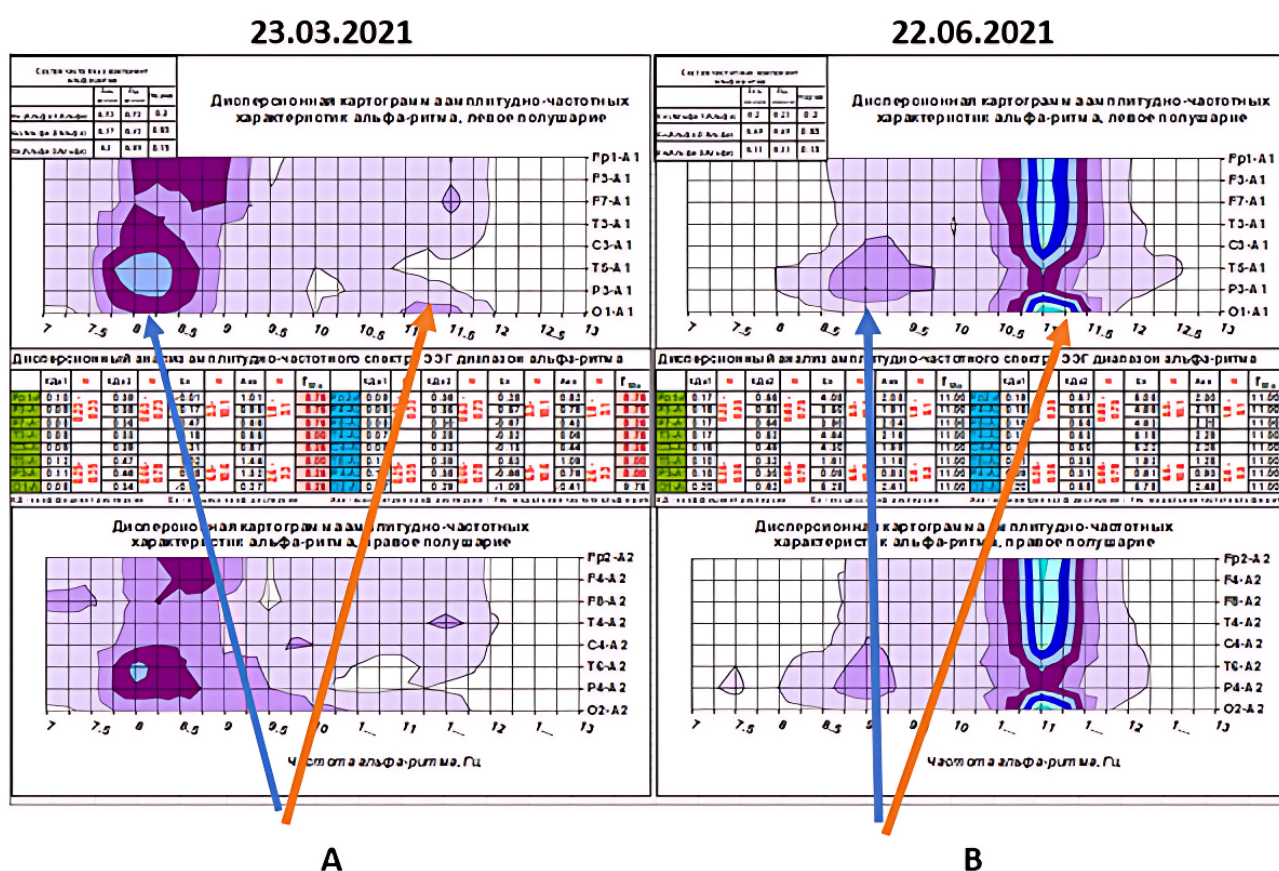
It was found<sup>16</sup> that in the neural-glial network of the brain (NGNB) there is a mechanism by which it synchronizes the activity of the NGNB of other people so that the decoding of information entering the brain of all members of society is carried out in the same standard conditions – otherwise we simply would not understand each other

and have different judgments about the same subject. Of course, this happens in practice, but all healthy people know what “dog” and “cat” are and do not confuse them with each other. This mechanism is very stable and manifests itself on the EEG in the form of vibrations called alpha rhythm. Normally, its frequency is 10 Hz, and increasing it to 12 Hz leads to an increase in the “resolution” of the brain – a direct correlation between the frequency of the alpha rhythm and IQ has been found. A decrease in the alpha rhythm frequency below 9 Hz leads to mental retardation and dementia. If these parameters are stable over time, then we have a person with a certain stable mentality – normal, reduced and elevated.

With the help of the DAFCAR technique, it was found that the impact on the NGNB of the factors causing DID, in some cases, leads to an intermittent change in the functional ability of the NGNB. In other words, periodically NGNB “works” on one or another frequency.

Moreover, these transitions can occur very quickly, and the parameters of these transitions are very similar. Naturally, when switching to another mode, the brain begins to perceive and interpret information in a different way. Unfortunately, cases of such observations using EEG are quite rare due to the negative attitude of psychiatrists to neurophysiological research methods. Even less often it is possible to track them in dynamics, but such cases have already been registered.

I propose a case of observation of an intermittent change in the functional ability of NGNB in patient B, 38 years old. Upon admission in March 2021 (Figure 1A): Confused, disoriented, and not available for contact. Speech is a meaningless set of words. Restless, aggressive and it does not serve itself, Untidy with urine and feces in bed. After treatment (Figure 1B) in June 2021: Good-natured, willingly involved in conversation and pleasant in communication, inquisitive Euphoric.



**Figure 1** Dynamics of DAFCAR in the range of 7-3 Hz. The upper cartogram is the left hemisphere; the lower cartogram is the right hemisphere.

**A:** 23.03.2021 Splitting of the spectrum into 8 and 11 Hz, the dominant (“working”) frequency is 8 Hz (blue arrow); the “subordinate” frequency is 11 Hz (red arrow).

**B:** 26.06.2021 Splitting of the spectrum into 9 and 11 Hz, the dominant (“working”) frequency of 11 Hz (red arrow); the “subordinate” frequency of 9 Hz (blue arrow).

It is easy to notice that in the presence of two different functional states of NGNB, we have two different personalities: one is dementia, aggressive; the other is with a normal mentality.

## Conclusion

The use of the DAFCAR method makes it possible to use forensic psychiatric examination with higher efficiency to identify persons

with deviant behavior and criminals and to understand the underlying causes of their actions. To this end, you can apply a 3-step examination methodology:

1. Neurophysiological screening – using the DAFCAR technique. With the help of it, you can “weed out” up to 85% of healthy people who do not need further examination

2. Psychological testing using diagnostic scales
3. Expert work of a psychiatrist on a comprehensive assessment of the data obtained.

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## Conflicts of interest

The author declares no conflicts of interest.

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