

Секция «Биология, медицина, философия: совместная проблематика дисциплин»

## Logical criticism of the idea "Cogito ergo sum by MRI"

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Criteria of human death were different during different periods of history. Before the 20th century, it was considered sufficient to use heart activity or breathing as a criterion of death, but the development of resuscitation science updated the problem of criteria. There are situations when the heart works, there is breathing, but doctors can register that the person is dead. The criterion of death is death of the brain. James L. Bernat, Professor of Neuroscience and Neurology at the Geisel School of Medicine at Dartmouth, New Hampshire, noted that 4 facts are also necessary for acceptance of the criteria: (1) agreement on the paradigm conditions that frame the analysis and clarify the task; (2) identifying the definition of death, which makes explicit the meaning of death that is accepted in our consensual usage of the term but that has become obscured by technology; (3) identifying the criterion of death that shows that the definition has been fulfilled, and that can be incorporated into a death statute; and (4) devising bedside tests of death for physicians to perform to satisfy the criterion. Russian philosopher Elena Bryzgalina notes that if applied to cases where patients are in a long vegetative state, these criteria are questionable. In 2010, Allan H. Ropper, Professor of Neurology at Harvard Medical School authored an article in the New England Journal of Medicine titled: "Cogito ergo sum by MRI". In this article, he writes about cognitive activity in patients with brain trauma. Brain of part of persons reacted to their names and important private information. He writes that in the future, with the help of MRI, it will be possible to decide the fate of the patients (Which patients? Like the ones mentioned by Ropper? Then it should be: "such patients". He notes that these results are not completely safe for decisions. In 2017, the book "Early detection of consciousness in patients with acute severe traumatic brain injury" was published. The authors made many experiments that confirmed this idea ("Cogito ergo sum by MRI") This position postulates awareness as the criterion of life. It has not only ethical, but also logical problems. Let us present this position in propositional logic or in predicate logic. Maximally simplified, it looks like this: "if someone is aware, they are alive." After formalization it looks like this:

1)  $p \rightarrow q$  - where  $p$  is aware and  $q$  is alive

2)  $P(x) \rightarrow Q(x)$  - where  $P$  is aware and  $Q$  is alive

As in the propositional logic, as well as in the logic of predicates formula  $((A \rightarrow B) \wedge \neg A) \rightarrow \neg B$  wrong.

In this case cognitive activity is the criterion of life and not the criterion of death. This situation provokes more questions about the use of MRI for making decisions about the fate of patients

## References

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