

The problems of neurocentrism

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According to the current mainstream paradigm in neuroscience, there are three essential components considered in an experimental research (Buzsáki, 2019): the observer (the neuroscientist), the brain (the organ) and the outside world (the environment). A well-known Turkish neurophilosopher summarized this paradigm in a concise statement in his book (Tura, 2018): “The world is a huge Penfield experiment”. Due to this empiricist view that currently drifts the whole field, there exist material brains and all other is neural projections of the material world surrounding them. In this picture, the world embedded in space-time is conceived as if it is an object of a grand omnipotent scientist.

The world is supposed to convey sensory information (stimulus) for the brains to be encoded and subsequently for the necessary motor actions to be decided upon. Thereafter, the observing experimenting scientist interprets how that projected information, i.e., the neural code, represents the outer world. If both the brains and the outside world of things are material beings made from the same stuff, how can the former material thing represent the latter material thing in a privileged way but not the other way around? Unless there is a magical element in the brains, the idea of some material more or less veridically representing some other material seems to be inherently problematic. Like the structure of famous barber paradox introduced by Bertrand Russell, “the barber who shaves all who cannot shave themselves”, the brain is assumed to represent all who cannot represent itself, but this time with a twist, unlike the helpless poor barber, the brain of the experimenter neuroscientist can somehow also represent other brains, thanks to neuroimaging and data analysis techniques. Though, it follows that the experimenter’s brain who senses a brain, may also be sensed by another brain which would go on *ad infinitum*, leading to an infinite regress. This line of reasoning arises the question, what about the brain as a material thing to be perceived? What does really yield the brain a privileged ontological status within the physical world? Some would say, perhaps the large scale small-world connectivity, nonlinear complexity or plasticity – though this does not assign, for instance, the atmosphere or a social media platform such as Facebook or a cancerous malignant tumor any mental property that the brain is presumed to possess or generate, particularly properties of consciousness. Thus, ironically, the monistic physicalist tendency of neurophilosophers, who are ardent opponents of Cartesian dualism of mind and matter, arrives to even a stranger dualistic cul-de-sac: dualism of the brain and the rest of the world.

However, one should not forget that there is no such a thing as “the brain” as well as “the chair”, as there is no such a “thing” being universal and normal. Both are our abstract useful constructs. Our own models conceptualize these natural and man-made things and take the abstractions to further our steps, both in daily life and scientific activities. The template common brain is hence an invention of neuroscientists. We scientists assume a common image of brain from our statistical analyses of many, while excluding the statistically marginal ones. Normalized brains are collected from groups of people that are almost always constrained by the political and cultural Zeitgeist. The vast majority of neuroimaging studies draw their results from the brains of Western psychology students as the Western researchers can access them rather easily and free of charge. For example, visual cortices of Australian Aboriginal brains are known to be quite different from the “normal” ones (Klekamp et al., 1987), in addition to the many reported cases of hugely lacking in material but all the same functioning pathological brains (e.g., Borgstein and Grootendorst, 2002). Though the template normalized brain does not exist as a thing, this obviously does no way negate its

usefulness. On the contrary, it offers us an opportunity to intervene into the brains intelligently, such as in brain computer interfaces and electromagnetic brain stimulations.

Neurocentrism misses this point of the irreducible gap between abstract epistemic closures (knowledge) and concrete ontological openness (becoming). Being aware of it could enable and encourage the scientists to transform the scientific episteme and march to more effective interventions and technological innovations, instead of being dogmatically stuck under the weight of out-of-habit but no-more-useful cumbersome assumptions held by the current paradigm. This presentation attempts to underline some of the common misleading ideological neurocentric assumptions.

[1] Borgstein, J., Grootendorst, C., Half a brain, *The Lancet*, 359, 473, 2002.

[2] Buzsáki, G., *The Brain from Inside Out*, Oxford University Press, 2019.

[3] Klekamp, J., Riedel, A., Harper, C., Kretschmann, H. J., A quantitative study of Australian aboriginal and Caucasian brains, *Journal of Anatomy*, 150, 191-210, 1987.

[4] Tura, S. M., *Zor Problem: Bilinç*, Metis Yayınları, 2018.