Commentary 01 on
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ARE QUANTUM THEORIES OF CONSCIOUSNESS WORTH BOTHERING ABOUT?
By Chris Nunn

MULTIFORM CONSCIOUSNESS BEYOND THE BRAIN

by Paul Jones

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Abstract

The principal statements of Nunn's article are considered from the viewpoint of a collective-effect conception of consciousness, incorporating materialism, multiparadigm approach and sociality. Physiology is not enough to speak of consciousness, since consciousness does not belong to a single organism, being an effect of non-linear interaction of many organisms.

As I regard it, Nunn's article puts forward the following basic ideas:

- neuroscience cannot be considered as the only way to the science of consciousness;
- different paradigms should be combined for an adequate description of phenomena that are diverse by their nature;
- consciousness is a part of a "larger realm", which embraces both material and ideal phenomena;
- what is often treated as "paranormal" may be mere manifestation of another aspect of quite common processes revealing their less conventional sides;
- quantum theory is an essentially multilevel paradigm, and its laws will be applicable every time the relations between different levels of a specific phenomenon have to be considered.

I will comment on some of these statements in more detail, hoping that Chris Nunn will forgive me if I misinterpret his words mislead by my own thoughts.

Personally, I liked Nunn's irony towards neuroscience and the grandeur of its achievements. Indeed, for an old-fashioned guy who learned neuropsychology from Luria and psychology from Vygotsky and Leontiev, the activities of neuroscientists may look like an elite club, where respectable people spend their lives pretending that they are doing something serious. At a closer look one may get astonished by the fact that, despite all the bright theories and an ocean of physiological discoveries, there have been no progress in what concerns human psychology and consciousness proper. I do not want to compare neuroscience with astrology or medieval demonology, but the spirit of Descartes appears to haunt every book on the neural mechanisms of consciousness, or a properly moderated "scientific" dispute of the members of the club. The constructions suggested by neuroscientists are in no way less abstract and speculative as those by Plotinos or Thomas Aquinas – or the spiritualistic ideas of Goswami, to pick a more recent example.

Of course, nobody can neglect the valuable experience acquired in neuroscientific research, be it either impressive pictures of the functioning of the brain, or ingenious mental experiments and logical tricks. It is only when one wants to learn something about consciousness that they have to abandon neuroscience, save possibly the negative result: there is no consciousness in the brain. This has nothing to do with denying materialism as the basis of any scientific approach. Consciousness cannot exist without being implemented in that complex biological systems, it needs a kind of brain – but a single brain is not enough for it. It is not only that there is no part of the brain where consciousness

could be localised, but there is no single brain (or a body) that can be told to host consciousness. Consciousness is no more the result of the brain's functioning than the velocity of a falling stone is related to its mineral composition. Nobody doubts that the laws of motion may depend on the properties of the moving bodies (just take parametric resonance for a well known example); however, any motion can only be relative to a definite reference frame, and it is external interactions of bodies that specify both kinematics and dynamics within the whole system.

Here I come to the definition of consciousness as a collective effect in a social system. To produce consciousness, Nature had first to develop the three indispensable components:

1) complex enough organisms with flexible reactions to external stimuli;

2) complex enough environment that would make these organisms co-operate to survive;

3) the ability of the individuals to reflect their co-operation and its products.

This system is essentially non-linear, with any activity distributed among all the members of the community, being reflected in every individual in a specific way. As it is well known, distributed non-linear systems may exhibit collective behavior, so that many individuals would act in sync forming a relatively stable structure. When the structure is hierarchical, there is a topmost element (like the crest of the wave), which could be identified with the Subject. The reflection of this hierarchy in the topmost element is consciousness.

Thus understood, consciousness is relatively independent of the particulars of the brain physiology, or any other possible implementation, provided the individuals are complex enough. However, participating in collective motion creates a very special kind of environment for an individual organism, influencing its development in a way supporting quite certain physiological formations and suppressing the infinity of other possibilities. The approach is exactly inverse of that of neuroscience: it is not that brain functioning defines consciousness, but rather consciousness gets projected into the brain, regulating the relationships between its various subsystems. This accounts for the well known fact that the same behavior may be accompanied by quite different patterns of neural activity, and this diversity grows with the degree of subjectivity increasing.

The rest can be readily deduced from the collective-effect model of consciousness. Thus, it does not matter which kind of mechanics is used for the description of conscious behavior: there may be different aspects of it, and some of them allow using the methods of analytical mechanics [1], while some others may fit well into the quantum picture [2]. Analogously, there are solitons, shock and stress waves etc. in classical physics—and there are numerous collective effects in quantum physics too: wave packets, phonons, laser modes, autoionizing states and so on. One could also mention numerous non-linear effects in both quantum and classical thermodynamics and kinetics, which lead to the variety of phase transition phenomena, and the popular today chaos and catastrophes.

The collective (social) model of consciousness might also account for the cases of "paranormal" correlation in behavior mentioned by Nunn. Indeed, two persons may act in sync just because they are involved in the same activity, and there is no need to physically communicate. However, the possible subtle interactions of a conscious individual with a physical system (like electroencephalograph) must be treated with more caution, to avoid attributing them to consciousness where the physical and physiological factors are more appropriate. One should distinguish subjective states from (neuro)physiological states, and distinguish physical states from them both. Also, it could be argued what has actually been established in experiment, since there is no direct link between physiological effects and consciousness.

See [3] for more considerations on the subject.

References

[1] G V Korenev, *Introduction to the mechanics of man* (Moscow: Nauka, 1977)

[2] Y A Ivliyev "New mathematical methods in psychology, their development and application (a

problem study)" *Psychological Journal* (Russia), vol. 9, pp. 103-113 (1988)

[3] P B Ivanov "Physics and Psychology in the Hierarchical World: Towards Physical Psychology" *http://unism.pjwb.org/arc/1996pp/ppe.htm*

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