

Science without religion is lame,
religion without science is blind

Albert Einstein

HOW TO BIND MIND TO MATTER ?

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Abstract

Three characteristics are described of the human mind, which cannot have material correlates. It is demonstrated, by assuming the opposite, that the brain could not be what it is. The term and concept are offered of *fundamental dualism*, expressing the idea that the connection between mind and matter is not of a physical but rather of a geometrical nature. It is suggested that the three characteristics described of the human mind represent effect of the geometry of spacetime in a sense that the description of the bond "between" mind and matter and the description of the topology of spacetime are, in essence, one and the same problem.

Description has been given of a hypothetical form of causality (called biocausality) and arguments are adduced in support of the view that the striving to reduce the mind to some material phenomenon leads to contradictions with experimental facts of neuroscience and to self-destructive theories in cosmology.

Finally, a brief description is given of the consequences from these ideas to theology (what Mind gives to matter is Time, and what matter gives to mind is life), and also of the concept of a multi-layer heterarchic structure of the psyche, which may have verifiable experimental predictions.

Key words: mind - matter problem - the anthropic principle

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An Outline of the Paper

The first part of the paper specifies the meaning selected for the two basic terms -- mind and matter. This has been done not through definitions but by the fixation of key characteristics identifying these phenomena, as well as by their juxtaposition with other phenomena of diametrically different nature. This is followed by formulating the problems of explaining the connection between mind and matter, and of what its correct formulation could or could *not* be, and by description of some of the requirements which must be met by a hypothesis on the nature of this connection.

Particular attention has been paid to three characteristics of the human mind, which cannot have physiological or physical correlates. It is demonstrated that an assumption to the contrary leads to contradictions with experimental facts of neuroscience. The other requirements which must be met by a hypothesis about the mind-matter connection are (i) the possibility, as a matter of principle, of explaining a wide spectrum of normal and anomalous phenomena such as mental rotation, the movement of the human arm, the movement of a centipede, psychokinesis, fire-dancing, poltergeist, and reincarnations, and (ii) two contrary requirements of a general character, namely: mind and matter must be connected in a way which *neither* separates them into two absolutely disunited entities without any connection between them, *nor* does it provide for a "short circuit" between them, whereby they would be unable to preserve their diametrically different natures.

All that leads to an absolutely radical approach to the mind-matter problem, and the author suggests the idea that the connection "between" mind and matter is effected neither by some physical field nor by some ad hoc postulated psi- or bio-field, but by a hypothetical **atemporal state of the entire Universe**, a state physically unobservable due to limitations of the special theory of relativity and possessing the three characteristics of the human mind referred to above. On a philosophical plane, these are the ideas about *Creatio Ex Nihilo* (Saint Thomas Aquinas) and about the potentially all-containing and omnipresent *Nothing* from which, at every moment "now", two complementary projections are created, mind and matter, separated by the arrow of Time (also arrow of being) -- the matter in the present and the mind in the *potential* future. Thus the answer to the question in the headline is: "Through non-being, who is **one** thing".

As regards the term of fundamental dualism, the author would like to clarify its meaning by an imaginary example.

Let us imagine an Eskimo who has never seen and will never see an elephant in his life, but who can nevertheless make observations on the elephant's trunk by means of two complementary devices, "nose" and "arm". In the course of these observations the Eskimo will certainly acquire a vague feeling about the category of dualism, but *never and in no case* about the category of "trunk". If we imagine that the Eskimo and his colleagues are enchanted by the idea of monism, they will soon form two hostile groups, one of which would maintain that what is primary in the elephant is "nose", while the other would insist on the "arm". Fortunately, the Eskimos are sober-minded people and such philosophical misunderstandings are impossible among them. Hence the method adopted by the author in the case of two complementary phenomena (e.g. wave-and-particle = = quantum phenomenon, matter-and-psyche = = being, being-and-non-being = = God) is to examine them as two different projections of a dual essence whose nature per se cannot be reached by our mind. We are in a position to obtain only an asymptotical knowledge about Him.

Part Two and Part Three of the paper offer conceptual description of the arrow of Time by a hypothetical form of causality, called **biocausality**, in which (i) the absence of Laplacian determinism is compensated by the determinant influence of the potential future on the present and (ii) the non-local, or rather quasi-local, interactions do not lead to causal paradoxes. Philosophically, the so-called biocausality is nothing but the Leibnizian *harmonia praestabilita*. The idea is that during the arrow of Time each subsequent moment "now" is an intelligent selection of one of the infinitely numerous potential states of matter, and the determination of the potential future is focused precisely on the selection of the *next* state of matter. **This selection takes place between the "now" states of the arrow of Time, i.e. in the atemporal state of the entire Universe.** Without such atemporal state of the Universe, which has a self-acting nature as the human mind, it is inherently impossible to describe *any* motion -- something well known from Zeno's first aporia. But in order to observe simultaneously more than one moment "now" belonging to one and the same material system, and hence to observe the intelligent selection of its *next* material state, we must use faster-than-light signals (transcendent tachyons) -- something which is impossible. Hence for each frame of reference the question "Where is the non-being and the absolute reference frame for the arrow of Time" requires the non-trivial answer: "**Both** inside in the instant 'now' **and** outside the material part of the Universe".

Thus the being, once created along/by the arrow of Time, cannot exist without the non-being, and vice versa. The mind, placed in the **potential future** of matter, is capable of **guiding** matter by acting on matter **through** matter. The lower the degree of physical predeterminedness, the more variable is the system, be it of biological or quantum type. One example: Unlike a pair of compasses, the human arm is not predetermined for any movement, and that is why the mind can perform *any* movement by 't. The possibility for the existence of free will is secured by the fact that the set of all equi-possible movements, defined by the principle of the least action, is an "open" one, i.e. that there is always the possibility of *emergence* of a "new" element of that set and, to put it briefly, the requirement for norming is inherently unfeasible.

All that suggests that the hypothetical atemporal state of the entire Universe, a state possessing free will and self-acting nature as those of the human mind, has taken care of the evolution of matter even before the appearance of conditions for the emergence of life and consciousness, and that the Universe has been created and continues to be created in a manner which is **both** the only possible **and** the optimum.

A more compact presentation of these ideas has called for the formulation of the **Theocratic Principle** (John 1:1-4; 1 John 4:12-13; 1 Corinthians 13:4-8) affecting first and foremost the fundamental probabilism in today's quantum cosmology: "God casts the die, not the dice" (Albert Einstein). Love, in the broadest sense of the word, is the primordial essence which can create and maintain harmony. It is, of course, quite a different matter whether we can describe all that mathematically, say, by the topology of spacetime.

As regards the predictions of the hypothesis for biocausality, it is believed that some of them can be tested experimentally in a psychophysiological laboratory equipped with biofeedback training facilities. (The author expects to be ready for these experiments in February 1990, and is making all efforts to visit the United States again.)

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