

PROBLEMS OF BIOLOGICAL PHILOSOPHY WITH REGARD TO THE PHILOSOPHY OF THE *UPANIṢADS*

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The basic thoughts of the *Upaniṣads* show a remarkable parallelism to modern aspects of science and natural philosophy. The old Indian philosophers were the first men who recognized the important fact that our sense data are only indications of the extra-mental reality, a statement which was established and investigated in detail by European thinkers like Descartes, Spinoza, Locke and their followers only in the seventeenth century. With doubtless certainty we can only pretend that we have psychic phenomena. When we try to find out what matter is like, we have to abstract from our feelings and from all sense qualities like colour, taste, smell, tones, etc., characters which only run parallel to physiological processes in our sense organs and brains. But in this process of reduction we do not abstract from awareness as such (in its most general meaning). Hence, all matter still remains a 'last something', endowed with a psychic character. This identical and hylopsychistical standpoint is parallel to the old Indian ideas of *ātman* and *brahman*. It is strengthened by biological considerations about the phylogenetical development of psychic phenomena in animals, by statements of brain physiology and by the fact that physicists define matter mainly in terms of relations of energy.

A. It will not be possible to develop the whole picture of modern biological philosophy in a short article. Theories and opinions are manifold and rather heterogeneous. I will, therefore, restrict my statements to a psychistic epistemological theory which seems to me the most probable solution, and I will only discuss some basic points showing an interesting parallelism to the philosophy of the *Upaniṣads*. Hinduism, too, had a manifold development and embraces very heterogeneous and even contradictory monistic (*advaita*) and dualistic (*dvaita*) statements. I will, therefore, only compare the basic thoughts of the *Upaniṣads* and their later interpretation by the Vedānta philosophy, especially by Śankara, and I will only speak about *philosophical* questions, disregarding religious convictions.

Apparently the old Indian philosophers, who developed the thoughts gathered in the *Upaniṣads* later on, were the first human beings who recognized the *fundamental problem of matter and mind*. And these philosophers already found a fundamental truth. They recognized the fact that the world as it appears to us is only *māyā*, only delusion. This lacking knowledge of the truth, this *avidyā*, explained Śankara later on in a more convincing

manner. He said that the world is not pure illusion but that it is *veiled* by *māyā*. There is some reality in our phenomena; however, the world outside our senses and thoughts is something else than man normally believes. He used the famous comparison of snake and rope. We may have a delusion and may mistake a rope for a snake. The snake does not exist, but there is something, the rope, having some similar characters. Later on this most important statement that our sense data are only *indications of the reality* outside our mind has been developed by European philosophers in more detail, especially by Descartes, Spinoza, Locke, Berkeley, Hume, Kant and their followers. However, they tried to solve this basic problem of mind and matter in different manners.

B. Let me explain now a conception which seems to me the most probable one because it is based on epistemological, biological and physical *facts*. All epistemological investigations should begin with Descartes's basic principle: 'de omnibus est dubitandum'. These Latin words mean that at the beginning of all inquiries we must doubt, we must be sceptical as much as possible in order to find out the real truth. With *doubtless certainty* we can only pretend that we have sensations, representations, feelings and processes of will, all of them being parts of our thinking processes. 'Cogito ergo sum' is the famous formulation of Descartes, 'I think, hence I am'. By our sensations and thinking processes we are convinced that not only our own mind or the minds of our fellow-men exist, but also something outside which we call matter. But we cannot postulate the existence of matter with the same certainty as the existence of our mind. It is characteristic that the question what matter is like has been answered in ever-changing manners corresponding to the level of science to which human knowledge has reached. At first matter seemed to be rather easily explicable as something hard or soft and coloured consisting of corpuscular molecules and atoms. However, the words hard, soft, red, green, and so on, are only expressions which describe characters of our sensations. These so-called *secondary sense qualities* are not characters of the matter itself. They only run parallel to certain physiological processes in our sense organs and brains. A leaf of a tree is not green, but it reflects rays of a certain wave-length (of about $520 \mu\mu$) which produce chemical and electrophysiological reactions in the sense cells of our retina and in connected nerve cells in retina and brain. Only parallel to these reactions we have the sensation of green. The same holds good for all other 'secondary' sensations or better qualitative characters of our sensations like hard and soft (= parallel to reactions in my tactile sense organs and brain), warm and cold, sweet and bitter or tone sensations. These qualities only indicate that matter outside our own phenomena exists and that it has different characters although absolutely different from the characters of our senses.

We see that we will get some idea how matter really is like by a *process*

of *reduction*. First, we have to subtract the qualities. Then we have to subtract the positive or negative feelings, which surely are not characters of matter itself because the same matter sometimes effects positive, sometimes negative feelings, pleasures of dislike. Now, what about the so-called 'primary sense characters', the *spatial and temporal characters*? Are they also to be cancelled as characters of matter? Some philosophers, especially our German philosopher Immanuel Kant, thought that these characters, too, are only subjective. However, here the situation is not the same as in the qualitative characters. It is an important fact that in all our sensations the *spatial* characters are identical. As well in our visual as in our tactile or our auditive sensations we find that spatial characters are three-dimensional, that they can be combined to a continuum and that everywhere we can put a point zero from which we can calculate the three dimensions. Therefore, we normally suppose an abstract space, although primarily we have only spatial characters of different sensations. As now the spatial characters of the different sensations seem to be absolutely identical, we may suppose that the spatial characters of matter are not only subjective but that they are of the same kind outside our mind or at least very similar.

The same holds good for the *temporal* characters of sensations. Here we experience the same unidimensional succession and the point zero, the present, is ever migrating (hence this so-called fourth dimension is something else than the other three dimensions). And here, too, the temporal characters of all sensations and thinking processes are identical and can be supposed as being very similar or even identical in matter.

In such a manner, by successively reducing from our sense data all those characters which are surely not characters of the matter itself and by attributing to matter only those characters which seem not or not much altered by our sense-organs and brain, we can get an idea what matter is like. However, we must pay attention to a very important fact: *in this process of reduction we did only reduce from certain characters of our phenomena and not from their purely psychical character itself, not from awareness in general*. The reduced something which we call matter always remains something which has awareness in a general sense (not in the sense of our own self-awareness). This 'last something', which is colourless, odourless, tasteless, not warm or cold, still remains in the psychical realm, that is to say, we come to a *psychistical and identistical picture of the world*. There exists something outside our own phenomena the alterations of which are governed by causal, psychical and logical eternal laws. So far as non-animated matter exists, as in stones, chemical compounds or single atoms, we must suppose only characters of general awareness, which I called *protopsychical characters*. Only when matter forms brain and sense-organs such protopsychical characters can be integrated on a higher level to an individual awareness.

C. It is of interest that we come to the same conclusion by purely *biological considerations*. As we all know thousands of single facts indicate that we human beings were slowly developed step by step from animal ancestors. And it is also a proved fact that the animal kingdom has been successively developed from lower to higher species, at last in one line of descent leading to monkeys, apes and man. When we now follow this line from *Homo sapiens* backwards to lower animals and ask how far we may suppose some awareness in animals, we can only judge by analogy. As already mentioned we can only maintain with absolute certainty processes of awareness for our own self. However, we are sure that our fellow-men, too, have corresponding sensations and thinking processes, because they can tell us that this is the case. We are not so sure that their phenomena are totally identical with our own phenomena. Some of us are partially colour-blind, some have feelings of pleasure when hearing modern music, others have feelings of dislike, and so on. Now, animals cannot tell us what they see and hear or remember. Higher mammals have brains and sense-organs which are very similar anatomically and histologically to those of man and these organs function in a very similar manner which can be shown by electro-physiological and biochemical methods and by training experiments. These higher mammals, therefore, show reactions to various stimuli or situations which are often similar to those of ourselves. Even the expressions of the faces or the whole behaviour are sometimes similar to those of our own ones. We are, therefore, convinced that a monkey or a dog is not only a machine reacting to certain light waves, chemical compounds, differences of temperature, and so on, but that they really see and hear, feel pain and remind something.

When we now go down the phylogenetical ladder we can draw similar conclusions with regard to lower mammals, birds, reptiles, amphibians and fishes. All these animals, too, have a brain and sense-organs of similar although simpler structure, they react in a similar manner, they can learn different tasks and retain it for a long period. In situations of conflict fishes become excited in a similar manner as higher animals and they can even be deceived by optical illusions like man. Hence we can be rather sure that all vertebrates are endowed with awareness, although of course the level of mental achievements is rather different in different classes.

But also most invertebrates have a brain and sense-organs both functioning in a similar manner as the brains and sense-organs of lower vertebrates, although the anatomical structure is rather different. A crab, a bee and an octopus are also capable of learning different tasks and their capabilities are not much less than those of small fishes. Also lower invertebrates like worms and Anthozoa can learn and retain for a short period. Hence, we may assume awareness of a more primitive kind in all lower animals endowed with a nervous system. Even Protozoa show so-called sense-reactions and it is

also claimed though not yet sufficiently proved that they show a primitive type of learning at least in the sense of a certain habituation. Thus we may conclude although with successively diminished probability *that all animals are endowed with awareness* although in lowest animals not in the sense of a centralized integration of psychical components. Such a conclusion is strengthened by the fact that the phylogenetical development of all organisms happened slowly and gradually without great jumps. It seems, therefore, very unlikely that awareness, that is to say, something totally different from matter (matter here in the 'normal' sense adopted by most scientists), originated suddenly in any level of phylogenetical development.

Investigations of the last three decades have shown that the animated and the non-animated world are not so clearly separated as one thought before. There exist viruses which are in some respect intermediate between lowest bacteria and non-living matter. They are composed of the same chemical compounds which are essential and typical for all living beings (desoxyribonucleicacids and proteins) and they show growth, reproduction, heredity and mutation. Many biologists, therefore, assume that life came gradually in existence. If this assumption is right, then we have to ask once again where to put the limit between awareness and non-awareness. We would avoid these difficulties by *the assumption that all matter is endowed with some 'general awareness'*, with some protopsychical characters which must only be integrated in certain more complicated systems like nerves and nerve systems to be some awareness in the normal sense.

D. We come to the same conclusion also by certain *physiological statements*. The molecules and atoms composing our brain cells and sense cells are not always the same. Many experiments with marked isotopes have proved that many molecules are replaced from time to time by molecules of our blood. Hence molecules of non-living matter, of our food, become embodied in the ganglionic cells and will represent here the physiological basis of our thinking processes. Hence it is obvious to suppose that already these molecules of the food have protopsychical characters.

E. There is still a fourth group of facts which leads again to the same conclusion. So far we know, within the planet system of our sun, only the earth is inhabited by living beings endowed with awareness. We would have to cross immense dimensions (at least several light years) to reach other sun systems where one of the planets with moons could possibly show animal-like life. *It seems very unlikely that awareness should be distributed so point-like in space.*

On the other hand, life originated on our earth only after a certain phase of development had been reached. During an immense time before no animals, no awareness existed. And possibly an immense time later on no life will exist. Where should such an awareness being distributed so point-like in

space and time come from? Is it not much more probable to suppose that *all* matter has some protopsychical character? And that such protopsychical components only became integrated to 'normal' awareness parallel with the integration of very complicated organic molecules, of nerve cells and of nerve systems?

F. As we see: four different groups of facts and the consequences with them lead to a *psychistical and identistical theory of knowledge*. This philosophical theory is in some respect rather similar to the thoughts and convictions expressed in the *Upaniṣads*. Already in the *R̥gveda* we find the opinion that only our senses cause the duality of mind and matter, that the reality is non-dual. Such an identistic view is more clearly explained in the *Upaniṣads*. All our experience is *māyā*. The truth about the reality is veiled by *māyā*. The last reality is something eternal, spiritual as well as material which is called *brahman*. Parts of the general *brahman* can become *ātman*, that means the spiritual essence of an animal or a human being. But after death this animal or human *ātman* will be resolved again in the universal *brahman*. Death is only a change. *Ātman* and *brahman* are more or less identical. *Brahman* is the great *ātman* = *hiranyagarbha*, that is the totality of all minds. Of course not all parts of the *Upaniṣads* express these relations so clearly and I am forced to simplify a little the matter. It seems, therefore, appropriate to quote a sentence of the *Kaṭha Upaniṣads*: 'As the non-dual fire, after it has entered the world, becomes different according to whatever it burns, so also the same non-dual *ātman*, dwelling in all beings, becomes different according to whatever it enters. And it exists also without.' This *ātman* or *brahman* is soundless, colourless, intangible, odourless and eternal—absolutely corresponding to the epistemological theory which I developed. That is to say: *The philosophy of the Upaniṣads anticipates our hylopsychistical and identistical views.*

The assumption that *ātman* or *brahman* is eternal and remains unchanged as a whole anticipates also to some degree the law of the conservation of energy. In the *Munḍaka Upaniṣad* for instance we find the following statement: '*Brahman* . . . which is eternal and omnipresent; all-pervading and extremely subtle, which is imperishable and the source of all beings.' The thoughts of the *Upaniṣads* are also in so far parallel with our modern statements as they recognize the *lawfulness of the world*. I believe that the results of modern science and philosophy also involve the conviction that the universe is governed by eternal causal, psychical and logical laws.

G. I am well aware that Hindu philosophy was later on developed in manifold and very different directions. By many systems the basic non-dual standpoint (*advaita*) was abandoned. Like in other religions the *personification* of natural laws and forces became again prevailing. Normally, average men are not familiar with abstract ideas. They need personal gods to whom

they can pray. The pantheistical assumption of an all-pervading god governing the world is still in accordance with our philosophical theory. All more far-going personifications (Śiva, Viṣṇu), however, are religious convictions which should not be mixed with purely philosophical investigations. We will, therefore, desist from a detailed discussion.

H. Lastly another conformity of biological and Hinduistic thinking may be mentioned. As already stated the investigations of modern animal psychology proved that we can adjudge to higher animals sensations, feelings, memory and even planning of actions. Hence, it seems to be justified to suppose *animal souls*. In consequence of such an assumption we have to esteem animal life, and laws of prevention of cruelties to animals are, therefore, enacted in many countries. Hinduistic convictions correspond to such views. The idea and the practice of *ahimsā* could be an admirable model for many other nations.

As truth will always be victorious, all the mentioned ideas of the *Upaniṣads* corresponding so well with certain aspects of modern science and philosophy will have a great future. Let us hope that they will become leading ideas of human thinking!

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