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## Objective Knowledge: Popper's Biological Approach

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### **Abstract**

*Popper put forward a three world theory to encompass subjective knowledge and objective knowledge as well. Popper without denying the personal or subjective knowledge further argues that this should be studied from a biological or evolutionary point of view. All knowledge grows by the method of variation and selection found in living organisms. Human knowledge is adaptive and increases by conjectures and refutations. This approach from the standpoint of biology unifies Popper's whole philosophy. The way in which Popper's philosophy of biology contributes to the integration of thought can be seen in the new expression of the main problem of epistemology.*

**Key words:** *Objective knowledge, Conjectures, Refutations, Problems, Theories, Criticisms*

All knowledge grows by the method of variation and selection found in living organisms. Human knowledge is adaptive and increases by conjecture (blind variation of untested, new theories) and refutation (selective retention). This is evolutionary epistemology. The new approach from the standpoint of biology is not incremental, i.e., it unifies Popper's whole philosophy. The way in which Popper's philosophy of biology contributes to the integration of thought can be seen in the new expression of the main problem of epistemology. According to Popper, the main task of the theory of knowledge is to understand it as continuous with animal knowledge, and to understand also its discontinuity, if any, from animal knowledge. Moreover, Popper stated that the origin and the evolution of knowledge might be said to coincide with the origin and evolution of life, and to be closely linked with the origin and evolution of the planet earth. Evolution theory links knowledge, and with it human beings, with the cosmos, and so the problem of knowledge becomes a problem of cosmology. Thus, Popper significantly generalizes the earlier approach, i.e., experience is theory-impregnated and structure-impregnated. Thus, the direct outcome of Popper's philosophy of biology is a theory of knowledge called evolutionary epistemology. It is the outcome of Popper's understanding and analysis of the process by which knowledge, be it human or animal grows. Regarding this view, the term 'knowledge' alludes to the objective end products of certain



evolutionary processes, ranging from the emergence of organs such as the eyes, to the most sophisticated scientific theories which man has propounded.

Popper without denying the personal or subjective knowledge further argues that this should be studied from a biological or evolutionary point of view. He put forward a 'three world' theory to encompass subjective knowledge and objective knowledge as well. 'World 1' meant what is usually called the world of physics, of rocks and trees and physical fields of forces. 'World 2' meant the psychological world, the world of feelings, of fear and of hope, of dispositions to act, and of all kinds of subjective experiences. 'World 3' meant the world of the products of the human mind. It also includes works of art, ethical values and social institutions. Further, the world of scientific libraries, books, scientific progress, and theories, including mistaken theories are in world 3. Although a physical object, such as a book, belongs to world 1, it contains information belonging to world 3. There maybe two books which have identical contents, but they are two separate world 1 objects containing identical world 3 contents. When read by two people, they give rise to two distinct and private sets of world 2 events, based on world 1 brain processes. When the two people attempt to communicate their understanding of the book in spoken or written form then the contents of their speech or writing belong to world 3. Such communication involves world 2 in the form of thoughts and intentions, and world 1 in the form of brain processes and the sound waves and marks on paper. The contents of the communication may be different from the original contents of the book, due to the imperfect understanding, even so, there will be objective relationships between the original contents and the modified contents. An important feature of Popper's world 3 is that it is both man-made and autonomous. He maintained that it is possible to accept the reality or the autonomy of the world 3, and at the same time admits that it originates as a product of human activity and at times transcending its makers also.

Objective knowledge belongs itself to world 3. It constitutes the biologically important part of world 3, and that part which has the most important repercussions upon World 1. Objective knowledge consists of guesses, hypotheses or theories, which are usually published in the form of books, journals, or lectures. Even it includes those problems that are unsolved and the various arguments that are in favor of as well as against the several types of competing theories. (Popper, 2000, p. 10) Thus, objective knowledge forms part of the World 3 of mental products. The growth of objective knowledge will be part of the growth of world 3. From the point of view of biological evolution, the third world originally evolved because of its



tremendous survival value. Thus, Popper's approach to the solution of problems and especially the approach to world 3 will be biologically oriented, by making use of evolutionary ideas.

For Popper, among the higher evolutionary forms of human life not all problems are those of survival. They may be consciously self-critical in their attempt to solve problems and allow their hypothesis to die instead. Popper nevertheless regards the growth of human knowledge as bearing a remarkable resemblance to the process of evolution as portrayed in Darwin's theory of natural selection. His natural selection refers that every instance of knowledge consists of hypotheses that have survived all sorts of struggle for existence and have found to be comparatively fit and will eliminate those unfit hypotheses that cannot survive the competitive struggle. (Popper, 1972, p. 41) However, instead of practical success, the goal is to solve problems in such a way that the theories increasingly approach the truth. The conscious method of criticism is considered to carry on the process of natural selection on a non- genetic or exosomatic level. (Popper, 1992, p. 85)

The approach of evolutionary epistemology is that it identifies knowledge initially as a product of variation and selection processes characterizing evolution. The most important function of knowledge must be to generate survival and reproduction of organism that are supposed to deploy it. Thus, organism with better knowledge of their environments will be preferred to organism with less adequate knowledge. Thus, the phylogenetical evolution of knowledge depends on the degree to which its carriers survive natural selection through its environment. Evolutionary epistemology takes into account the individual i.e., the ontogenetic development of knowledge is also the result of variation and selection processes, but this time not of whole organisms, but of 'ideas' or pieces of potential knowledge. The distinctive feature of scientific discovery is to generate hypotheses by different methods (variation) and to eliminate the unwanted and inadequate hypotheses (selection). This analogy between the creation of ideas and Darwinian evolution has been made prominent enough from the last decades of nineteenth century by various scientists and scholars. Popper initiate an epistemology of science and put forward conjectures and refutations as a fundamental criterion that every scientific theory must follow, and that it must undergo selection and must be falsifiable.

According to Popper, Darwinism teaches that organisms become adapted to the environment through natural selection and teaches that they are passive throughout this process. But to stress more importantly is that the organisms find, invent and reorganize new environments in the course of their search for a



better world. Organisms evolve by trial and error, and their erroneous trials, are eliminated as a rule, by the elimination of the organism that is the 'carrier' of error. All this has changed radically in man through the evolution of a descriptive and argumentative language. Man is capable of being critical of his own trials, of his own theories. That is, these theories can no longer be found in his organism or in his genetic system. They may be formulated in books or in journals and they can be further discussed and shown to be erroneous, without destroying the 'carriers'. Thus, the trials, our tentative hypotheses, may be critically eliminated by rational discussion, without eliminating them, which indeed is the purpose of rational critical discussion. Moreover, in this situation, the 'carrier' has to defend the hypothesis against erroneous criticism and modify it if it cannot be successfully defended.

Popper maintained that the progress of science lies, essentially in the evolution of its problems and it can be gauged by the increasing refinement, wealth, fertility, and depth of its problems. Scientific problems are preceded by pre-scientific problems, and especially by practical problems. For, every organism has built-in expectations, and problems arise, most characteristically, when some of these expectations are disappointed. Popper's scientific method can be summed up by the following four steps: selecting some problem, perhaps by stumbling over it; attempting to solve it by proposing a theory as a tentative solution; further by way of critical discussion of theories, knowledge grows by elimination of certain errors, and thereby learn to understand the problems, and the theories, and the need for new solutions. Thus by critical discussion, even the best theories puts forward new problems. (Popper, 1997, p. 41) These four steps can be summarized as problems, theories, criticisms and new problems.

According to Popper, among these four steps, the most important characteristic of science is that of error-elimination through criticism. Objectivity of science and rationality of science are merely aspects of the critical discussion of scientific theories. Scientific objectivity is therefore nothing else than the fact that no scientific theory is accepted as dogma, and that all theories are tentative and are open all the time to severe criticism, to a rational critical discussion aiming at the elimination of errors. The result of a scientific discussion is very often inconclusive, i.e., it is not possible to conclusively verify (or even falsify) any of the theories under discussion and also cannot say that one of the theories has definite advantage over its competitors. There must be a certain amount of luck to reach a conclusion that one of the theories has more merit and lesser demerits than the others. For, some people maintain that the theory



is accepted only for the time being. Thereby, the critical discussion justifies the claim that the theory in question is the best available, or in other words, that it comes nearer to the truth.

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