



DISCUSSION (CORRESPONDENCE)

In this section we shall publish brief communications commenting on published papers or bringing up special points of interest which can be discussed by correspondence.

MECHANISM, VITALISM AND THE ORGANISMIC HYPOTHESIS

Dear Sir:

In any science a clarification of concepts is prior to the proper and unequivocal use of terms. The purpose of this note is to clarify the concept of the organismic hypothesis in relation to the concepts of mechanism and vitalism.

The following statements are typical in exposing a certain confusion existing in biological and psychological thinking. Haldane writes: "I am not, and never have been, a vitalist, although simply because I am unable to accept the traditional mechanistic biology of the last few decades I am often regarded as a vitalist. Vitalism in any form has the same fundamental defect as the mechanistic theory of life."¹ And Köhler writes: "I wish to make the following statement expressly: "These dynamic concepts do not contain a single thought in the direction of vitalism. . . . Dynamical ideas . . . are no more the discovery of the vitalists than of the mechanists."² The parallelism in these two statements is not a mere coincidence. Many times have the proponents of the organismic or gestalt hypothesis asserted that they are not mechanists (meaning one thing), whereupon their opponents have taken them at their word that they are non-mechanists (meaning another thing) and labeled them vitalists, a label which was indignantly rejected by the recipients. I shall endeavor to point out the sources of this confusion with the hope of clarifying it and thus making a modest contribution towards a more exact terminology.

The organismic or gestalt hypothesis insists that the biologist and

¹ J. S. Haldane, *The Philosophical Basis of Biology*, p. 31.

² W. Köhler, *Gestalt Psychology*, p. 146.

psychologist³ deal with processes that are in a constant flux in such a way that they form at any one moment a dynamic whole determined by the preceding dynamic constellation of forces and determining the succeeding one. Even the concept of force is a fluid one, a force never being a constant element in the constellation but being itself determined by the constellation. According to the opposing hypothesis, unfortunately called 'mechanistic' by the adherents of the organismic hypothesis, biological and psychological processes are composed of elementary processes each of which contributes its own characteristic function to the total pattern.

This dichotomy, organismic-mechanistic, is thus concerned with *the nature of the organization* of the pattern of forces in a certain process. On the one hand we have a dynamic whole determining at any time the constituent forces, while on the other hand we have a mosaic determined by the direction, intensity and place of the elementary forces. The mechanistic hypothesis (in this sense) has sometimes also been called 'atomistic.' Perhaps it would have been wise to use this term to the exclusion of 'mechanistic' whenever one was concerned with the nature of the organization of the forces in a certain process since 'mechanistic' was already being used in a different antithesis as will be pointed out presently.

Much older than the dichotomy of concepts just discussed is that of vitalism-mechanism. As soon as Descartes had explicitly stated his mechanistic conception of life, the opposite or vitalistic conception was also formulated explicitly. Its chief tenet is that biological processes cannot be entirely explained in terms of physical and chemical processes or forces, and that in addition to these we must assume the existence of a factor whose nature is different from them. In opposition to this hypothesis the mechanistic hypothesis holds that all biological processes exhibit no other than physical and chemical influences. This earlier dichotomy, vitalistic-mechanistic, is thus concerned with *the nature of the processes themselves* and not with their organization.

Since this is the older dichotomy we can easily see how confusion arose when a new dichotomy was labeled organismic-mechanistic. In both sets of terms the word 'mechanistic' occurs, and in each it has a different meaning. In one dichotomy, organismic-mechanistic, 'mechanistic' refers to the nature of the organization of forces and in the other, 'vitalistic-mechanistic,' it refers to the nature of the processes themselves. The resulting confusion was that anything not mechan-

³ Lack of competence in his field prevents me from referring to the physicist.

istic could be either vitalistic or organismic. Thus it happened that men like Haldane and Köhler had to deny vigorously, if not indignantly, that they were not vitalists. Of course, they are not vitalists despite the assertions of their critics. Relative to the dichotomy vitalistic-mechanistic their hypotheses are mechanistic, that is, they do not assume a vital force over and above physical and chemical influences. However, relative to the dichotomy organismic-mechanistic their hypotheses are non-mechanistic, that is, they assume a dynamic whole and not, as Köhler puts it, a merely topographical distribution of elementary forces.

If it were not for the unfortunate double meaning of the term 'mechanistic' the confusion might not have arisen and proponents of the organismic hypothesis would not have been called upon to deny that they are vitalists. To overcome the difficulty, to remove the source of confusion and misunderstanding would demand replacing the term 'mechanistic' as the second member in the two sets of terms by two different words which are more appropriate to the underlying concepts.

I have mentioned above that the term 'atomistic' is sometimes used as the second member of the dichotomy concerned with the organization of forces, namely organismic-atomistic. Another possibility might be organismic-elementaristic. Our terminology should avoid opposing organismic by mechanistic, because the historically prior opposite to mechanistic is vitalistic.

As far as the second dichotomy, vitalistic-mechanistic, is concerned, which refers to concepts regarding the nature of the biological processes themselves, it will be more difficult, if not impossible, to find a substitute for 'mechanistic.' The term 'naturalistic' might do. However, there is no real necessity for getting rid of 'mechanistic' here, because its juxtaposition to 'vitalistic' indicates its meaning sufficiently.

Such a clarification and terminology would make it possible to characterize, for instance, a vitalistic (and similarly a mechanistic) point of view either as organismic or atomistic, or an organismic (and similarly an atomistic) point of view either as mechanistic or vitalistic. But even if no change in terminology is made,—for after all, words are merely formulae to be filled in by their context,—a clarification of concepts seems advisable to end a needless confusion.

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