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PHYSICAL INDETERMINISM AND VITAL ACTION

SCIENCE and philosophy, but especially science, have found great difficulty in reconciling the apparent indeterminism of many vital manifestations, particularly voluntary action, with the strict determinism of physical science. The traditional problem of freedom, with all its vast implications, is the classical expression of this difficulty. One characteristic aspect of this problem seems peculiarly significant, especially when considered in relation to the present state of discussion on the foundations of physical science. This is the qualified nature of freedom as expressed in external action; there is always a large element of restriction or external determination. No one has claimed that vital indetermination is complete, although Bergson speaks of the living organism as exhibiting a maximum of indetermination.[1] . To take a simple illustration: the evidence for levitation is doubtful; even its most accomplished exponent would hesitate to launch himself from the edge of a cliff, however firmly he might be convinced of the freedom and efficacy of his own will. And he would continue to rely daily on the mechanical dependability and physically determined regularity of his own bodily organism. I allude to this inconsistency with no merely satirical intention, but simply in order to define as clearly as possible a crucial aspect of the problem. It is undeniable that the organism is subject to rigid physical determination in a large part of its activities; it seems equally undeniable that it is free in others; the difficulty is to decide where determinism ends and indeterminism begins. Intuition gives an overwhelming impression of freedom in voluntary action. Yet analysis, in tracing down the sources of such action, seems always to reinstate determinism; it shows the will to be motivated; motives have their natural origins; actions not consciously motivated either are habitual and referable to past motivation, or are instinctive and determined by heredity. In either case we seem to have a mechanistic determination. Physiology finds in the organism a nexus of physico-chemical determination differing from that in non-living nature only in its complexity; in fact the organism can be shown to depend for its survival on the constancy and stability of its proc-

[1] "Creative Evolution," English translation, Chapter 2; cf. e.g., p. 126.