

appropriately attached to the powerful general principles about love and aggression which are by that time already in existence. It is the profoundest of scientific principles that a theory must work in practice; and that applies to scientific ethics no less than to the latest modification of the quantum theory.

¹ Carnap, R., "Philosophy and Logical Syntax", Kegan Paul (1935), 24.

² Riviere, J., "Love, Hate and Reparation", Hogarth Press (1937), 9.

³ Wittgenstein, L., "Tractatus Logico-Philosophicus", Kegan Paul (1919), concluding sentence.

⁴ Freud, S., "The Ego and the Id." Cf. "General Selection from the Works of Sigmund Freud", Hogarth Press (1937), 259.

⁵ Freud, S., "New Introductory Lectures on Psycho-analysis", Hogarth Press (1933), 84.

⁶ Klein, M., "The Psycho-analysis of Children", Hogarth Press (1932), 195, 197.

⁷ Engels, F., "Feuerbach", Lawrence, n.d., 62.

⁸ Engels, F., "Feuerbach", Lawrence, n.d., 47.

⁹ Huxley, T. H., "Evolution and Ethics", Macmillan (1894), 83.

I FIND myself in fundamental agreement with Dr. Waddington, though I should base my argument on an epistemology more explicit than his own. To start off, I would aver, with Mach, that "bodies or things are compendious mental symbols for groups of sensations—symbols that do not exist outside of thought". The basis of all knowledge is experience. So-called external objects are constructs from experience: equally the doctrine of evolution and the view of the universe summed up in the Ten Commandments are constructs from experience. Of course, the experience may be partial: elements in it may be false (that is to say, unconfirmed by the majority of our fellow-men). The activity of the mind which links together elementary perceptions and fashions the constructed symbol may be inadequate to make a symbol which shall cohere with other symbols as we try to picture some wide region of the universe in which we find ourselves. But by a process of trial and error, in which the individual constantly checks his experience by that of others, the race has gradually created, among other ideas, those which we distinguish as external objects, laws of Nature and ethical principles.

We assume that there is an external world of objects to which our bodies belong. But, if that world exists, is our picture of it correct? We cannot say, for we cannot transcend human limitations. Are our scientific laws accurate? Probably not: they correspond, however, to humanity's present state of mental development. Can we say that our ethical standards and the commands by which we seek to make them effective are sound? They, too, are as partial, as transitory, as our supposed knowledge of the spiritual character of the universe.

Are then our scientific laws and our ethical principles of no value? By no means. They are

approximations to truth, nearer than those which were reached in the past and later modified or even discarded by the growing wisdom of the race.

Unfortunately, the problem of the mind-body relation is so intractable that it is difficult to say how far intellectual and ethical tendencies are inherited. I would agree with Dr. Waddington in affirming Goodrich's conclusion that all characters are both inherited and acquired. The genes carry certain modes of reaction to environment. A relatively homogeneous community is built of the same stock of genes changed to some extent by recurring mutations; and an individual born into it assimilates with especial ease the community's intellectual, social and ethical formulation of experience.

Is Dr. Waddington quite fair in his strictures of T. H. Huxley? The evolutionary process on earth, until the rise of the placental mammals with their increasing parental affection, was non-moral. "Nature red in tooth and claw" is an actual fact. Huxley was right in asserting that between man and the cosmic process as it has been, there ought to be war. The strongest objection to ethical theism lies in the fact that the creative process has been non-moral. But just as evolution has been a creative process in that new things, and in particular man himself, have emerged in it, so it may well be that the process itself is being transformed no longer, it may be, are new animal forms being evolved, but new levels of spiritual understanding are emerging. Boutroux died twenty years ago, but his "Religion and Science in Contemporary Philosophy" is not out of date. He said: "According to the results of science herself, there is nothing to guarantee the absolute stability of even the most general laws that man has been able to discover. Nature evolves, perhaps even fundamentally." He added that, if the remotest principles of things are thus transformed, that very transformation must obey laws which are analogous to the immediately observable laws of experiment. Are we wrong behind such change to find purposive activity, to postulate God as its source, and to see in the ethical change which results from the growth of human experience His progressive revelation of Himself?

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COMMENT on Dr. Waddington's important and interesting paper is difficult because it raises so many questions which are highly controversial. Only a treatise could deal with them all. I must confine myself to some rather disconnected jottings. Frankly, I am not quite clear about the main