

EINSTEIN AND IDEALISM.

At a recent meeting of the Aristotelian Society, where Lord Haldane presided over a discussion on the Idealistic interpretation of Einstein's theory, Prof. Carr tried to show how his monadistic doctrine is the sole basis of the Theory of Relativity. Undoubtedly, Prof. Carr has opened a new and suggestive track to metaphysical speculation by means of the new physics; and one must admit that both the exposition and the defence of his thesis have been to his credit, although he was accepting too easily realistic arguments.

But I question very much whether the brilliant foliage of Einstein's theory has not hidden its very roots from the perspicacious eye of Prof. Carr, who gives too much weight to mere analogies. At the International Congress of Philosophy, held at Oxford in September, 1920, I maintained, as against the crude subjectivism of Prof. Eddington and the extreme absolutism of Dr. Ross, that the Theory of Relativity cannot be taken as a crucial system to decide between idealism and realism. This view is generally shared by scientists, who cannot profess a great sympathy for the doctrines of those philosophers who endeavour to drive science on to a certain ground which is not its own. I now go further, and hold that the Theory of Relativity is rather a thing prejudicial to idealism, at least as Prof. Carr proposes it.

I fail to see how the essence of the General Principle of Relativity is to introduce in the realm of physics, the very bane of the physicist, subjectivism. Prof. Carr thinks too much of Einstein's observers, when he says that Relativity shows that it is impossible to abstract from the mind of the observer and treat his observations as themselves absolute and independent in their objectivity. When Einstein speaks of observers, he does not mean at all particular active minds, as philosophy studies them, but mere beings belonging to different systems of reference moving relatively to one another. In other words, what makes the difference in the space and the time of two observers belonging to two different systems of reference moving relatively to one another, is not the particular mind of each observer, as Prof. Carr seems to think, but the very motion of their systems of reference, the mere fact that they are moving relatively to one another. I do not see any subjectivism here; on the contrary, it is an objective cause, *i.e.* motion, which makes all the difference in the formulation of the observations of the two observers. And this is so much true that, in the limiting case when the two observers belong to the same system of reference, their expressions of the same phenomenon, with all the

unfathomable difference of their minds, are identical. For them, space and time can be taken as two absolutes; time flows evenly for both of them; coincidence in space and simultaneity are continual experiences for them; their world-lines are Euclidian. The philosophical import of this limiting case has been overlooked, because its implications do not clash with the old physics. But in fact, it challenges idealism to explain how the laws of nature can be looked at in the same way by many observers having each, of course, his own particular mind, and belonging to the same system of reference.

It is not true, then, to say that the work of physical science is to co-ordinate the observations of observers, each of whom uses his own co-ordinates, and for whom there is no common measure. The object of physics is rather to present natural phenomena in such a way as to be understood by every particular mind. When Prof. Carr says then that there is no universe common to all observers and private to none, he seems to harbour at the back of his head the old Newtonian ideas of an absolute space and an absolute time. We have been accustomed, through heredity, to express our ideas with reference to an absolute space and an absolute time; and it is difficult to think with reference to a spatio-temporal universe, taken as an absolute whole. But that is what Relativity asks us to do when dealing with physical science. If each system of reference has its own space and its own time, the space-time considered as a whole, the absolute Universe, is a reality common to all observers, whatever be the relative motion of their system of reference. The enunciation itself of Einstein's General Principle of Relativity reflects that absolute reality, independent of the mind and even of the motion of the observers, absolute in its objectivity although relative in its expressions by various observers. "The laws of nature," says the principle, "remain unaltered whatever be the motion of the observers." What is the very implication of this principle? It means that there is an objective invariant, the reality of which does not depend on the mind, although its expression is affected by the motion of the observers, not the subjective activity of their minds. In fact, a natural phenomenon can be expressed by the same mind, either according to what Prof. Carr would call the frame of reference of the observer possessing that mind, or according to an infinity of frames of reference belonging to different observers. All these expressions, by means of an indefinite choice of systems of reference, of the same phenomenon by the same mind, give a strong support to realism against a subjective interpretation of the Principle of Relativity.

As a matter of fact, idealistic philosophy and science follow two ways diametrically opposed to each other. To illustrate this statement let us call "sensible reality" the world of our direct perception. Now, idealism sacrifices the second term to the first: what was a sensible reality still remains sensible, but it is not any more a reality, for it cannot be detached from consciousness. Idealism

insists then on the dissociation of perception in favour of pure sensation; and our knowledge is confined to the immediate data of consciousness. On the contrary, science, in its development, falls upon the first term, and progressively its concepts digress more and more from sensation, they become less and less sensible, while their reality is reinforced. Reality cannot become intelligible, it cannot become the object of science unless it is stripped of all its sensible qualities. To constitute itself, science has to destroy the singular, which is the only reality, and create the universal, substituting thereby for sensible reality a world of concepts. This seems to lead to idealism; but we must remember that if science is an interpretation of reality, such an interpretation presupposes two terms: mind and nature, independent the one of the other. Now, if the mind is annihilated, science would undoubtedly disappear; but reality will still be there, although mutilated, it will still exist. Nature will continue its performance; the spectators only will be missing.

THOMAS GREENWOOD.