

The measurement of these intensities is similar to that of time. We can immediately perceive the difference in loudness of two tone-sensations a_0 and a_1 to be the same in amount as that between a_1 and a_2 . Then we may call the difference a_2a_0 twice that of a_2a_1 . This is done in Weber's law, when we call the just perceptible differences equal. Such measurement, however, does not imply the whole-part relation.

It appears, then, that the above intensive facts owe their intensity to their transitivity. But is this the only possible criterion of an intensive fact? Is it the only guarantee that where there is greater, less or equal, there will be no addition and consequently no whole-part relation? I think it is, and for the following reasons:

The commutative law (without which there is no addition or whole-part relation) seems able to hold only if the elements considered retain their individuality when brought into different permutations and combinations. Now we can postulate this of bodies and figures in space (though not always) and so here (usually) addition, wholes and parts are possible. The condition of no addition, etc., would then be, always, that the elements considered (some of them at least) do not retain their individuality when brought into various permutations and combinations. But this condition is equivalent to transitivity, which can belong only to temporal facts. Therefore the temporal character (and what is involved in it) alone can be the condition of intensity. Of course it does not follow that every fact which has to be defined in temporal terms is intensive. When, however, it has the property of being greater, less or equal, it must be intensive, and guarantees the presence of pure order without extensive quantity, in the world of our experience. As space or coexistence makes possible extensive quantity, so time or succession makes possible intensive quantity.

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DISCUSSION

DR. PERRY'S REFERENCES TO WARD'S 'NATURALISM AND AGNOSTICISM'

IN his interesting article on 'Philosophical Procedure with Reference to Science,' published in No. 7 of this JOURNAL, Dr. R. B. Perry refers to Ward's 'Naturalism and Agnosticism' in terms that seem to indicate a serious misapprehension of the author's purpose. This misapprehension appears likewise to be shared by others: I have heard more than one person speak of the book with some

irritation as 'an attack on science.' Here are some of Dr. Perry's sentences: "Not satisfied with confuting the dogmatic positivist, and partly for the sake of confuting him, the author indulges in considerable riddling of the conceptions of science. The reader is encouraged to believe that with a little more dialectic, Professor Ward could overthrow the whole system of science. . . . But, in truth, philosophy presents a very sorry spectacle when she attacks the conceptions of science in a hostile spirit. Not only is it presumptuous for the amateur to show the specialist the error of his ways, but also humorous for the study whose barrenness is somewhat notorious, to challenge the legitimacy of her neighbor's numerous and very healthy progeny. It is thus that philosophy from time to time waxes so sublime as to be ridiculous." After referring in no very complimentary terms to Karl Pearson's 'Grammar of Science,' Dr. Perry concludes his paragraph as follows: "Ward and Pearson furnish convenient illustrations of reactionary tendencies in contemporary philosophy of science. It is a question of some logical nicety which position is most untenable, that of the philosopher who refutes science in detail, or that of the scientist who refutes philosophy in general" (pp. 170, 171).

Since Dr. Perry is himself a teacher of philosophy, we can not regard his contrast of the barrenness of that study with the fruitfulness of science as indicative of his real opinion regarding the value of philosophy, or indeed, as anything more than a piece of rhetorical pleasantry. But his remarks are positively misleading when he speaks of Ward as 'attacking the conceptions of science,' 'showing the scientist the error of his ways,' and 'refuting science in detail.' It should be abundantly clear from the preface to the first edition, as well as from numerous passages in the body of the work, that the author's quarrel is not with natural science as science, but with 'Naturalism,' *i. e.*, with the mechanical theory of the world when it is put forward as philosophy—as a final ontology. Here are a few sentences taken from that preface: "These lectures . . . only attempt to discuss in a popular way certain assumptions of modern science which have led to a widespread, but more or less tacit, rejection of idealistic views of the world. These assumptions are, of course, no part of the general body of the natural sciences, but rather prepossessions that after gradually taking shape in the minds of many absorbed in scientific studies, have entered into the current thought of our time. . . . If with the history of science and the results of the sciences before us we pass straight on to the construction of a philosophy, idealism has no chance. But in truth, 'modern science' hardly needs to construct its philosophy; for without any conscious labor on its part, the naturalistic view of the world

seems to stand out clearly of itself. . . . But is it verily positive fully-orbed reality that science sets before us? This is the question that leads us to examine the mechanical theory, the theory of evolution and the theory of psychical epiphenomena.’

Statements like these can be found in abundance, and would seem to make sufficiently clear the author’s own conception of his task. Of course, if it could be shown that he has not maintained this standpoint but has entered the lists against natural science on its own ground, Dr. Perry’s strictures might still be justified. But Dr. Perry has made no attempt to show this, and I see no facts which could be cited to support the claim.

In the second edition of his work which was published last year, Professor Ward restates his position still more clearly, and also deals directly with criticisms of the same general nature as those offered by Dr. Perry. (Supplementary Note to Part I.) I shall quote a few sentences which will, I think, make further comment on my part unnecessary: “Naturalism is not science, and the mechanical theory that serves as its foundation is not science either. . . . Nevertheless, though Naturalism and the natural sciences, the Mechanical Theory of the Universe and mechanics as a science, are logically distinct, yet the two are at first sight very similar and historically are very closely connected. . . . In fact Naturalism, like Materialism, is only physics treated as metaphysics. . . . But many of them [modern physicists] consider that their science is attacked by those who seek to lay bare the latent metaphysics, the physical realism on which the Mechanical Theory of the Universe rests. The criticism of this theory in the preceding lectures has been so regarded. It has been described as ‘an attempt to prove that the science of mechanics is no science at all’; and again as making the ‘exactest of sciences impossible’; and finally as exhibiting ‘a dislike, a contempt, a hatred, a loathing of everything connected with science’! In point of fact this criticism rests throughout on the expositions of a school of physicists . . . steadily increasing in number and influence, who reject entirely the almost mediæval realism imparted by Descartes to modern physics. . . . It surely verges on extravagance to suppose that men like Kirchhoff or Poincaré . . . are seeking ‘to invalidate the methods of science,’ or to prove that ‘mechanics is no science at all.’ . . . I should assuredly never have dreamt of daring to meddle with physics as a positive science, still less of attempting to invalidate its methods or belittle its splendid achievements. There is a striking passage in Mr. Bradley’s ‘Appearance and Reality,’ which I have had throughout before my eyes: ‘As a working point of view, directed and confined to the ascertainment

of some special branch of truth, phenomenalism is of course useful and indeed quite necessary. 'And the metaphysician who attacks it when following its own business is apt to fare badly.' But he continues in words that I have already quoted (p. 64 above), 'When Phenomenalism loses its head and becoming blatant, steps forward as a theory of first principles, then it is really not respectable. The best that can be said of its pretensions is that they are ridiculous.' This blunder I believe that physical realism has perpetrated so far as it has advanced or defended the mechanical theory of nature. And it was solely against these 'pretensions' and the realistic interpretation of physical conceptions on which they rest, that my strictures were aimed" ('Naturalism and Agnosticism,' 2d ed., Vol. I., pp. 303-305).

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FOURTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

THE fourth annual meeting of the Western Philosophical Association, held with the University of Missouri at Columbia, Mo., on April 1 and 2, was, in one or two essential particulars, the most satisfactory which the association has had. Pains had been taken to avoid overcrowding the program; not more than two papers were presented at any one session; and the result of this wise policy was seen in unusually general and adequate discussions of most—unfortunately, not all—of the topics presented. Since the only justification for the oral delivery of technical papers consists in the promotion of criticism and a comparison of notes between workers in the same field, good discussions are of the essence of a good meeting; and in this respect the sessions at Columbia were more successful than those of previous years. The social features of the gathering were also happily arranged, and, through the unstinted hospitality of the faculty of the University of Missouri, were highly enjoyable; they had the simplicity and informality that are best calculated to promote good-fellowship and a better acquaintance among the fellow-specialists for whom such meetings are held. Some seventeen members were in attendance, including representatives of seven universities and colleges.

One whole session was devoted to a general discussion of the philosophy of Herbert Spencer, opened by a comprehensive and penetrating criticism of Spencer's metaphysics by Professor E. L. Hinman, of the University of Nebraska, and an examination of Spencer's contribution to sociology by Professor C. A. Ellwood, of the Univer-