

All that can be done pictorially is to portray the retinal picture which the eye gets when looking at such a moving object,—blurred spokes in the wheels, streaming ribbons and banners, blurred visions of oscillating levers, or what not. The law is: Always put there just what the eye could really see, and no more. Too much interpretation and assistance on the part of the artist defeats its own purpose.

The experiment is described here in the belief that others will find it useful.

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## DISCUSSION

### THE SUPPOSED CONTRADICTION IN THE DIVERSITY OF SECONDARY QUALITIES—A REPLY

PROFESSOR LOVEJOY'S reply to my note<sup>1</sup> so far misses the point I have tried to make, that it seems worth while to repeat the original argument: (1) "Is there a science which actually treats secondary qualities as subjective?" I mean, is there a science which in the course of its regular work finds it necessary to use the category of consciousness to explain the variation of secondary qualities? To me the answer appears decidedly negative in all the senses of the question which Professor Lovejoy distinguishes. Can any one point to a single reputable text book in optics in which the reason why the same object appears square from one point of view and oblong from another, is explained by the action of consciousness? Obviously not, for physics explains such variations by the mathematical properties of light rays. If some physicists, impregnated with current philosophic theories, do assign the things with which they are not concerned as physicists to the realm of consciousness, that is *obiter dictum*, in no way determining their laboratory procedure or mathematical computation. Professor Lovejoy admits that "whenever what is supposed to be one object is perceived differently by different percipients, science customarily assumes some *objective* difference (of primary qualities) between the two cases." "But," he goes on to say, "this difference is not, by any science which keeps its wits about it, supposed to be completely identical with the difference between the two sensations; it is merely treated as the external occasion and counterpart of the latter difference" (p. 215). Now the last clause represents a philosophic theory which may or may not be justified, but it is surely not a prerequisite for scientific investigation. Some of us have serious doubts about the existence of sensations "in a

<sup>1</sup> This JOURNAL, Vol. X., pages 27 and 214.

realm of merely subjective appearances." I do not believe I have ever had a sensation of red distinguishable from the redness of an object, but surely such doubts, however fatal to my philosophic orthodoxy, can not disqualify me from the study of optics and acoustics.

The distinction between primary and secondary qualities is, as Duhem has shown, in no wise necessary for scientific physics.

(2) We come now to the main question. Is there any contradiction in "describing the same object as 'really' possessing simultaneously all the incongruous qualities which at any given moment appear in the perception of different percipients?" I see no difficulty whatsoever in the same object possessing all sorts of contradictory qualities, provided no two contradictory qualities appear in one point of view or relation. Professor Lovejoy admits, for instance, that the same line may simultaneously subtend an angle of  $23^\circ$  from one point of view and  $45^\circ$  from another. Why may not an object be square from one point of view and oblong from another? Why is there no contradiction in the first if there is one in the second? I am told that this question is "a rather curious disregard of the familiar distinction between the relations and the qualities of a thing" (p. 216). Now I am quite willing to confess that I do not pay the usual homage to this familiar distinction, and I hope on some other occasion to pay my respects to its deceptive and treacherous nature. But even if we accept the usual distinction between qualities and relations, I see no reason whatsoever why the angle which a line subtends should be called a relation, and the angle which it makes with another line (its squareness or obliqueness) be called a property. Even if there were some reason why the latter alone should be called a quality, and not the former, it would not save the situation for Professor Lovejoy's argument. I have a parallelepiped before me. If I stand it on its rhomboid base it is a right parallelepiped, but if I stand it on one of its rectangular bases, it is oblique. The distinction between rightness and obliqueness here is identical with that between the quality of the square and of the oblong. Must I drag in consciousness to explain why the same parallelepiped has the quality of obliqueness in one position and of rightness in another? It would indeed be sad for the science and the students of geometry if that were necessary.

The difficulty which Professor Lovejoy and others find in conceiving one object possessing contradictory qualities, seems to me to be due to a ghost of the thing-in-itself. "Every real thing," we are told, "has, besides its relations, a 'nature' or character or set of qualities of its own" (p. 216). Now, whatever may be said for the existence of *dinge-an-sich*, it seems certain that science does not deal with them, and that none of its objects possesses qualities in

isolation but only in given systems.<sup>2</sup> If things could not have contradictory qualities, neither could they have contradictory relations or attributes, and all predication would be impossible. I regard Plato as having cleared this up in his controversy with the Megarians.

As a layman in psychology I have to take for granted what its history tells me, *viz.*, that the faculty of memory is no longer used as an explanation of the fact that some things are forgotten rather than remembered. Just so it seems to me we shall have to give up consciousness as an explanation of the fact that the same object appears different from different points of view, and that some propositions are true while others are false.

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## SOCIETIES

### CONFERENCE ON THE RELATION OF LAW TO SOCIAL ENDS

A UNIQUE and important conference was held on April 25 and 26 in New York City, Professor Dewey presiding. It was a meeting of jurists, philosophers, and sociologists, for a survey of matters of mutual concern. It was actuated by a belief expressed by Professor M. R. Cohen in the Philosophical Association last December, that "jurisprudence is a philosophical discipline," and that philosophy and law alike have much to gain by recognizing that fact. Or, to amplify the belief in the sense in which it was entertained by most members of the conference: jurisprudence is a sociological discipline, and sociology is, or ought to be, philosophical. The achievement of the conference was directly due to the efforts of Professor Cohen; the response to these efforts was a remarkable witness to their timeliness. Political movements are rapidly putting forward their philosophical aspects; there is a widespread conviction that the time is ready for a review of our fundamental political ideas in the light of whatever social, ethical, psychological, and even metaphysical, wisdom we can muster; and that a certain menace of alienation between the law, especially as interpreted by our courts, and the more popular currents of public life can be met only by a better understanding of the principles upon which the administration of justice depends. The conference is a symptom, also, that the awakened interest in political and legal philosophy evident in France and

<sup>2</sup> Failure to perceive this is also at the basis of the confusion in the theory of innate or "natural" rights.