

of which is implied, the triad thus forming the epistemological unit. Logical analysis falls into line with chemistry and mathematics, and this through no forcing of an analogy, but through the use of a single mathematical form to make graspable a great variety of experiences. This interpretation of logic is not to be confused with the realism of the schoolmen. The general term is not more real than the particular, but it is more concrete. The greater concreteness or immediateness which the particular term like *Cæsar* seems to have is due to the many other relations which it has. In comparison simply with the term *men*, however, it is more abstract or derived.

6. Finally this meaning is of importance in psychology where we must insist upon 'consciousness,' or 'the Given,' or 'experience' as the primary concrete of which all the so-called elements are in comparison abstractions. That is to say compared with this primary concrete, the subject and object, the ego and the non-ego, the I and the it, the will, the feeling and the intellect are abstractions derived by the process of analysis. This primary concrete (the 'social-consciousness,' 'pure experience,' the 'absolute') is not a deduction nor an induction, nor a composition, nor an hypothesis; it is the point of departure.

After we have determined upon a meaning for analysis we shall be ready to proceed to the use of analysis in psychology and, if consciousness be the best point of departure, to an analysis of consciousness.

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## DISCUSSION

### RELATIVITY AND REALITY

THERE is of course a connection between the recent discussion of relativity or phenomenality and the efforts to define infinity. This connection, too, has been frequently felt and almost as frequently directly avowed by those who have been parties to the different controversies. Simply the antithesis of the real and the relative, and the antithesis of the infinite and the finite present essentially the same fundamental problem to the philosopher. In this paper, or rather in this brief note, only the former of the two antitheses is the object of direct interest; but at the close a suggestion or two will be ventured in regard to the latter.

Even at the present time, and also even among the more prominent thinkers of the present time, the idea that the relative and the real must somehow exclude each other is very much in vogue. True, an adequate philosophy of evolution may seem to demand their

closest intimacy, but philosophy can hardly be said to have taken evolution and its peculiar demands with the seriousness that might have been expected. I do not undertake to say whether the scientist or the philosopher is most to blame for this, but the indifference or the only half-hearted or half-minded attention to evolution appears to me beyond question. Take, in evidence, Mr. Bradley's 'Appearance and Reality.' Some may object that this work already belongs to the past, and certainly the discussion that it has stirred up might be expected to have accomplished something towards relegating even so important a book. But suffice it to say that the discussion is not yet at an end, and the strenuous zeal in numerous quarters to keep the phenomenal and the real, the theoretical and the practical apart, the determination from one reason or another to hold the will aloof, or the struggle to bolster up an epistemological or a psychological or an ethical and spiritual pluralism is excellent evidence that the thinking of the day has not succeeded, satisfactorily to itself, in finding a suitable resting-place for reality in this world of what seems so hopelessly relative.

Possibly reality also 'hath not where to lay its head.' Possibly philosophy is bound to seek, but never find harmony between what is relative and what is real. The latter possibility, however, belies its own contention, since seeking and finding are inseparable, while the former possibility only suggests that to lack a resting-place or a habitation may be as significant metaphysically as it has been theologically or spiritually, and this without any prejudice whatever against the idea of the real being immanent in the relative. Moreover, for my own part, I very strongly feel that the present failure to bring the real and the relative into their true intimacy has been in large part unnecessary, and Mr. Bradley is conspicuous for his needless failure. He is so nearly, if not quite, blind to the real meaning of premises which he has himself stated very clearly.

Thus Mr. Bradley has argued from relativity to phenomenality; yet he is quite insistent that all relationship always implies difference both without and within that which is relative, and this implication certainly shows something in and with the relative that transcends the merely relative. To the same conclusion of phenomenality he has argued from the hopeless, endless regressus involved in any distinction, for example, in that between relation and quality, either party to the distinction being itself divided within itself on the same plan or having within a one-to-one correspondence with what is without, like Royce's perfect map of England, which must include itself, and its included self, and so on, *ad infinitum*; yet differences, each one of which includes the differentiation, must have at least some positive share in the reality of the whole which they comprise.

They may be as 'relative' as you please, they may be hopelessly lacking in that pet-conceit—really a dreadful bug-a-boo—of the hypostatical thinker, namely, in self-identity; but so much the better, for the one-to-one relation or the lack of self-identity which this relation implies, instead of keeping them out of the kingdom of reality, holds them forever in it. Moreover, as regards Mr. Bradley, were his differentiated differences not thus partners in a divided labor of comprising and maintaining reality, it is very hard, indeed, to see how he could have gone even as far as he does in the second part of his book towards restoring reality to human life and experience. And, lastly, Mr. Bradley has argued to relativity and phenomenality from the universally contradictory or paradoxical character of all experience. In fact this argument he relies on almost *ad nauseam*, and it is plainly only a special form of the argument from differentiated differences. Contradiction or paradox is only difference at its extreme. Yet, again, in the light of what he himself has said in his second part one has to marvel that he has failed to see, or has seen only with such slight appreciation, that just the inner difference, or the paradox, of any particular experience saves it, relativity and all, from having no positive part in, or contact with, reality. The inner difference not merely puts it, as has been said, *en rapport* with the totality of things, but also, especially through the proneness to paradox, or extreme self-opposition, insures a multiplicity of other experiences to balance and restrain the individual experience or say a conserving reaction or counteraction for the particular action. The great function of difference is balance, counteraction, conservation; and paradox, as it is manifested, only shows that in experience there moves a principle of integrity, a spirit of wholeness, that forever militates against mere phenomenality.

The idea intended here is this, though the virtual repetitions that follow may be unnecessary: Any particular thing or any particular experience which is divided against itself or whose own inner divisions have that one-to-one correspondence with the totality of the things among which it belongs, is therein and thereby saved from the disaster of mere relativity and phenomenality, for its own inner divisions correct its isolation and make it the true part of a whole, securing it a share in reality and in the necessary integrity of reality by putting it in vital contact with the whole, while at the same time from the outer divisions it gets positive import for its own individuality. With regard to the last point, metaphysically, as well as morally, an individual inwardly divided against itself through a division that is reflected in the world which includes it can be neither unreal nor insignificant.<sup>1</sup>

<sup>1</sup>Kant's *a priori* forms of experience really gave integrity or realistic value to experience, not in spite of, but just because of the antinomies with

But, the significance of individuality aside, if reversing the present standpoint we should start with the integrity and reality of experience as a postulate, that is to say, if we should begin by assuming and asserting, what seems very far indeed from unreasonable, that experience always has positive contact with reality, we could hardly escape from deducing the paradoxical character in experience that Mr. Bradley has made so much of, yet failed to appraise at its full value. How can any experience escape from being formally self-contradictory, if actually it is realistic? Can a part or a relation or what you will in the world of the definite ever be expected to meet the test of self-identity? If there is any wholeness to the world of things or any validity or integrity in the experience of things, can it possibly belong to what is not made up of parts that comprise the whole only by virtue of their lack of self-identity? And, on the other hand, can an undivided whole, a whole whose own self-identity is not the divided labor of unidentical parts, in short a whole that does not share with its parts the lack of self-identity,—can such a whole claim integrity or reality?

So, to return to our starting-point, which was also Mr. Bradley's, relationship implies differences; the different things all individually have some share in all the differences; and in consequence realism as contrasted with phenomenalism is the only possible conclusion from the universal fact of relativity. The real dwells in the differences of things relative and in the life and unity that these differences constantly serve, and it dwells also in the things themselves, since they are themselves all inwardly differentiated, as well as each one different from what surrounds it, and since the inward or intensive differentiation has the one-to-one correspondence with the outward or extensive differentiation. So conditioned, then, the real is plainly immanent in the relative. True, it may not have a visible or tangible form, nor a discoverable habitation, nor even a stone on which to lay its head, but it is neither less real nor less immanent on that account. A world of relations, a world whose reality and integrity depend on differences can hardly be real in any such palpable or hypostatical way.

And being immanent in the relative, after the manner which has now been indicated, reality is necessarily active or dynamic in its nature; to use what must be more than a metaphor, it is a tension of

which they were weighted, and if their antinomic character gave validity, their formal character made individuality also possible. A multiplicity of the objects of experience or of the subjects having experience was wholly consistent with the possibility of validity so long and only so long as the *a priori* forms, which being formal were capable of indefinitely different contents, were antinomic.

differences, of differences at once developmental and conserving or counteractive, giving movement at the same time that they insure poise. This tension of differences, moreover, involves constant change in the world of things, whether taken individually or taken collectively; yet the change, sweeping everything with it, can be only the persistence of reality, the maintenance of what is. Still, beyond this very brief reference to the dynamic character of reality, of a reality that is dynamic because immanent in the relative or in the at once active and counteractive differences that the relative implies, I shall not venture to go at this time. How the real could dwell in the relative and be experienced through it was, as will be recalled, the direct interest of the present note.

So, to conclude with just a suggestion or two in reference to the antithesis of the finite and the infinite always so properly associated with that of the relative and the real, it can hardly be necessary to say that the infinite has already been in evidence in the foregoing discussion. Thus suppose we accept the idea of the infinite of which so much has been heard in the last few years. Infinity, we are told, belongs to any class (group, collection, assemblage, manifold) according as it contains a part to which the whole is equivalent in the sense that between the elements of the part and those of the whole there subsists a unique and reciprocal, or one-to-one, correspondence. Under this test the series  $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}$ , etc., is infinite. The perfect map of England is infinite. Plato's individual, having in its parts a one-to-one correspondence to the classes of society, is infinite or is a party to the infinity of a society that includes such an individual. And the reality which is immanent in the relative, or in the differences of the relative that are themselves differentiated on the plan of a one-to-one correspondence, is infinite or, should we not say with Spinoza, absolutely or infinitely infinite. Furthermore, if our account of reality has been correct, its infinity is now seen to involve these things: (1) relationship, (2) differences, (3) distinction between intension and extension or between inward and outward differentiation, (4) one-to-one correspondence, (5) balance or integrity, and (6) activity or movement. Such an infinity, moreover, is immanent in the finite even as the real is immanent in the relative.<sup>2</sup>

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<sup>2</sup> Quite in line with this analysis of the concept of infinity I have already suggested in another place ("Professor Fullerton on 'The Doctrine of Space and Time,'" *Psychological Review*, March, 1902, pp. 174-180) that, mathematically, infinity has involved the distinction between quantity as mass and quantity as ratio or relation, and that with the development of this distinction, whether implied or expressed, the calculus and a mathematics of motion were

## NOTE ON PROFESSOR MÜNSTERBERG'S 'PERCEPTION OF DISTANCE'

PROFESSOR MÜNSTERBERG'S article in the last number of the JOURNAL, discussing the perception of distance with the verant, contains the statement: "The large public, suffering from the defects of its virtues, deprived, that is, of the privilege of a natural magnifying glass on account of normal eyesight, will of course gladly make use of this system of lenses. . . . If not every myopic person, then at least every myopic psychologist must have enjoyed these experiences before." In this connection, it seems well to note that the myopic eye probably has no advantage over the normal eye in this particular, provided the observer looks through a magnifying glass of short focal length. I have obtained the plastic effects very beautifully with lenses of 12 and 16 diopters. The same result may be obtained, of course, by looking at a photograph through a camera. The picture on the glass plate has all the plastic beauty that the stereoscope would show. In order not to confuse imagined perspective with this mechanically produced perspective, it is well to look at the picture upside down, or to use pictures which appear quite flat to the unaided eye.

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made possible. In this earlier paper appeared such statements as these: 'Infinity [treated as a quantity or a quasi-quantity] is only an indirection for [some] constant relation,' the constant relation, or differentiation, of bisection, for example, in the series: 1,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$  . . . etc. "The infinitely small or great taken quantitatively [or massively] is only symbolic of a uniform process, of an activity under a fixed law, of a principle immanent in every term of the series and giving to the series as a whole a unity that quite transcends the limitations of merely quantitative [or massive] division." "Infinity [as mass] stands as an indirect but not less effective way of asserting the constructive principle of a series and so also of symbolically presenting in a quasi-static form the dynamic character that the series contains or even more generally the quality of any number-group." And again: "The real last term [of an infinite series] is not indeed one more among all the other terms and coordinate with them; rather it is the finally abstracted principle, say the sheer parallelism [in the case of the lines that meet at infinity] or the bare fact of bisection—without anything left to bisect [in the series 1,  $\frac{1}{2}$ , . . . etc.] that sets or establishes the series." The ultimate, like the primary, can be only a mere abstraction for the eternal and omnipresent, for something immanent in the finite members of the series, or in the process or operation by which the series is constructed and by which, among other things, as the series develops each new term is so differentiated as to get a one-to-one correspondence with the term that has preceded it as well as with the whole out of which the series has sprung.