

now seen and what was formerly felt. Finally, when experiments on the perception of particular figures and forms come to be made, many cautions should be observed. First, the patient should get no hint that the visual form now before him was identical with any form which he had previously felt. If he was told, for instance, that one of the things before him was a circle and the other a square, he could hardly fail to notice four peculiarities in the one and an uniformity in the other, which would enable him to guess correctly. Secondly, before trying whether he recognised the identity of visual and tangible forms, care should be taken to secure the formation of *general* notions of visual form. Thus, if he had seen nothing but a blue triangle, his failure to identify its form with that of the tangible triangle would prove little, because the visual idea which he had formed might not be that of a triangle or even of a coloured triangle, but that of a blue triangle. Until he had seen several triangles differing in size, colour, position, and in the relative magnitude and inclination of their sides, we should have no reason to believe that he had formed the notion of what I may perhaps designate a visual triangle; and if he had not formed that notion—if the idea which he had derived from vision was less specific—his failure to identify the visual and tangible triangles could be accounted for on almost any theory. In fact, if triangles of different sizes and shapes were successively presented to an uneducated blind man, it is by no means improbable that he would fail to recognise the identity of their forms. The visual objects presented to the couched man should therefore receive names which were not associated with any ideas previously derived from touch or the muscular sensibility—suppose the letters of the Greek alphabet. By giving the same name—say Alpha—to blue, green, and red triangles, of all sizes and in different positions, we might insure the performance of most of the requisite abstractions; and when this had been done, the patient's reply to the question whether the Alphas were like anything which he had previously felt, would throw some light on the questions at issue. I think, however, the best course would be for the oculist to apply to a psychologist to assist him in making the observations. I was once applied to in this way; but the answers of the patient (before the operation) satisfied me that he possessed so much sight as to render subsequent observations of no use.

W. H. S. MONCK.

PROF. ROYCE ON "MIND-STUFF" AND REALITY.

I REGRET that ill-health will probably for a long while preclude my replying to the able articles of Mr. Gurney (MIND XXII.) and Prof. Royce (MIND XXIII.) on the variety of idealistic monism advocated by Taine, Clifford, Wundt, and myself. But I should be glad to have permission to offer a few remarks on some of the issues raised by the latter of these two papers.

In the first place I must plead guilty to unpardonable laxity of diction in having said, even conjecturally, that "motion *is* mind-stuff, that volume of feeling *is* mass, and intensity of feeling velocity". What I intended to convey was the conjecture that the phenomenon motion may be such a mathematical function of the noumenon mind-stuff that the quantity of motion is always directly proportional to the quantity of underlying mind-stuff. I think, however, that Prof. Royce is too hard on me when he says that "there is something fundamentally unintelligible" in my assertion. For although in the other parts of my essay I had made the terms of mechanical science—matter, motion—to signify respectively permanent possibilities of sensation (in the sense of Mill) and changes in those permanent possibilities, in fact, to signify phenomena, and although I ought therefore to have adhered to this nomenclature throughout, yet I might, without greatly straining language, and certainly with good precedents, have made these mechanical terms to signify instead the hypothetical noumena which underlie the possibilities of sensation and the changes therein. Adopting this latter nomenclature, it may be true or it may be untrue to say that motion *is* mind-stuff, but it is obviously no longer nonsense. My object in saying "motion *is* mind-stuff" was to avoid an awkward periphrasis. However, I do not seek to excuse, but only to explain. Taking into consideration the context, I hoped I should not be misunderstood. I am accordingly glad to find that although Prof. Royce pronounces my assertion "fundamentally unintelligible," he has himself supplied the explanation with admirable lucidity and terseness on page 374. Barring the allusion to a pre-established harmony, I could not wish for a more precise statement of my fundamental position than that which the Professor supplies in the following words:—"Suppose, then, that the world consists of fragments of mind-stuff whereof each one is endowed with a capacity for the change, within certain limits, of its own intensity and quality. Suppose, also, that by some pre-established harmony (other source is hardly well conceivable) the alterations in one atom are uniformly connected with alterations in other mind-atoms, according to fixed laws. Then, indeed, the world of mechanism, of dead matter and motion, could be in a manner conceived. That is, one could understand how to each simple phenomenal mechanical effect, e.g., a blow or a push, there corresponded some noumenal alteration in the mind-stuff atoms. Even the law of the conservation of energy would be capable of expression in terms of such assumed elements. Since velocity and mass would be interpreted in terms of ultimate alterations or permanences in the mind-atoms, all laws about velocity and mass could be expressed in the same terms." Prof. Royce is quite right in thinking that the doctrine of mind-stuff requires us to think of the noumenal world, not as consisting of unchanging atoms, but as a thorough-going flux after the fashion of Heraclitus.

By an easy transition I can now define my attitude towards Prof. Royce's statements that according to the mind-stuff doctrine "space-relations" must be "unreal and illusive" (p. 371), and that "at least

some mind-stuff is non-spatial" (*Ibid.*), and towards his question, "What meaning would there be in Euclid's axioms if the world were composed wholly of elementary sensations not grouped into conscious minds?" (*Ibid.*) Let us suppose a pair of mind-stuff fragments (I will not call them atoms, because I think we cannot legitimately form an opinion as to whether the Universe is a continuous or a discrete aggregate) A and B, and another pair C, D, such that A has exactly the same volume or massiveness, intensity, and quality as C; and B has exactly the same volume, intensity, and quality as D—such, in fact, that A, C are exact counterparts of each other, and that B, D are exact counterparts. Then, I conceive that the facts of causation in the Universe are such that A, B do not necessarily or usually influence each other (*i.e.*, produce changes in each other) in the same degree as C, D. These inequalities of mutual influence or causation give rise to the fact of Space in the following way. If A, B influence each other more than C, D, then the two phenomena corresponding to A, B (let us call them *a, b*: they may be quanta of motion, of matter, of force, of kinetic energy, or of some more complex function of mass and velocity¹) are nearer to each other in space than the two phenomena (call them *c, d*.) corresponding to C, D. If A, B do not influence each other at all, then *a, b* belong to entirely different phenomenal worlds. They are not contained in the same space. Thus distance-relations in the phenomenal world appear to me to arise from irregularities of causation in the noumenal world. Since the time of Lobatchewsky it has been well known among mathematicians that more than one scheme of distance-relations is logically possible: since the time of Riemann, that all sorts of schemes are possible—that Euclid's Space, in which we fancy (perhaps correctly) that our phenomenal world is situated, is only one among hosts of logically possible spaces. Which kind of space, *i.e.*, which kind of geometry, actually obtains in our phenomenal world, must depend, on my view, on the particular kind of irregularity which prevails in the facts of causation of the noumenal world. All we know is that our Space does not differ perceptibly from Euclid's ideal Space, *i.e.*, from a flat, homogeneous, monodromic, continuous manifold of three dimensions. The view here advocated falls, I believe, under that division of views on Space which Helmholtz characterises as "aprioristic". It does not affirm that the space-nexus is itself a fact of the noumenal world, but it affirms, with Herbert Spencer (*Principles of Psychology*, I, 227), that "there is some ontological order whence arises the phenomenal order we know as Space". In this sense, then, I agree with Prof. Royce when he says that the great bulk of mind-stuff must be non-spatial. With respect to Time I conceive the case to be entirely different. I agree with Prof. Royce that "ultimate mind-elements, conceived after the

¹ I have conjectured, in my paper (MIND XXI.), that they are quanta of motion, but it seems to me quite premature to form a positive opinion. Physiological psychology is the only science that can throw light on the question.

analogy of our simplest sensations, *have a time-element*," and I thank him for thus insisting on the salutary but oft-forgotten truth that Time is a deeper fact in nature than Space. It is too much the fashion to speak of them as if they were about on a level. The phenomenal world and the noumenal world (at least as much of the latter as we can legitimately infer the existence of) both exist in Time, but only the phenomenal world exists in Space.

I do not propose here to enter on Prof. Royce's remaining difficulty, viz., that of explaining consciousness as a mere aggregate of elements separately unconscious, further than to remark that I think a thorough-going nominalism helps us wonderfully here, and that I cannot conceive how Prof. Royce can explain the growth of psychical life in the embryo, the foetus, and the infant, on any other view. To do so must surely, unless we admit metempsychosis, involve at any rate the sudden creation of a "unity" or "entity" or whatever mysterious thing Prof. Royce conceives the ego to be apart from its constituent elements.

There are undoubtedly great difficulties in the way of conceiving conscious life as merely a stream of feelings—a "rope of sand," as Mr. Gurney calls it—even if they should prove insuperable, they could at most be fatal to the doctrine of mind-stuff in its narrowest form. They could not affect what I personally am far more concerned in maintaining, namely that general doctrine of idealistic monism, which embraces Berkeley and Schopenhauer as well as Taine and Clifford, and which is equally opposed to dualism, to crude materialism, and to that strange monism, more than once referred to by Prof. Royce, which, while regarding the physical and mental as two faces of the same event, appears to regard both as equally real, equally ultimate, or both as equally apparent, equally derivative. We could still say with M. Taine that, in this dualism of the physical and the mental, "all the advantage lies with the mental event". If we were to adopt Mr. Spencer's metaphor and call matter and mind the *x*'s and *y*'s of our equations (*Principles of Psychology*, I., 627), we could still maintain that mind alone is the *independent* variable.

In conclusion, I would express my regret that M. Taine's early enunciation (in 1870, *De l'Intelligence*, I., iv. 2) of the mind-stuff doctrine appears to be so little known, also my great personal obligations to Mr. Herbert Spencer for the luminous suggestion on page 161 of the *Principles of Psychology*, Vol. I. How thoroughly M. Taine's doctrine coincided with that which has since been enunciated by Prof. Clifford and myself will be apparent from the following passage—perhaps even yet the best summary of it:—

"Suppose a book written in an original tongue and furnished with an interlinear translation; the book is nature, the original language is the mental event, the interlinear translation is the physical event, and the order of the chapters is the order of being. At the beginning of the book, the translation is printed in clear and legible characters. But these become less so, as we go on, and here and there, from chapter to chapter, new characters creep in, which we have difficulty in connecting with the earlier

ones. At last, and above all in the final chapter, the impression can no longer be deciphered; but we have abundance of evidence that it is still the same book and the same language. It is just the reverse with the original text. It is very legible at the last chapter; in the one before it the ink is pale; in the earlier chapters we can still discover that there is printing, but can read nothing of it; before that again, all trace of ink has disappeared."

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VI.—CRITICAL NOTICES.

The Metaphysics of the School. By THOMAS HARPER, S.J. Vols. I. and II. London: Macmillan, 1879, 1881. Pp. lxxx., 592; xxvii., 757.

I.

In these two volumes Father Harper has given the first instalment of an attempt to resuscitate medieval ontology, and bring it into line with modern science, and to represent these as in harmony and mutually supporting and illustrative, to the exclusion of more modern philosophy. The metaphysic of the School and modern science (when modest and on its good behaviour) together furnish a sufficient rationale of the universe, and when Father Harper has completed his peace-making exposition, will have put all other philosophies from the Cartesian downwards out of court. So far as these two volumes go, it might perhaps be said that Father Harper has succeeded after a fashion. But it is very indifferently well, and the science will be found to be put on the "entities" like paint or artificial flowers. The sequel of this Notice, it is hoped, will go some way to justify these remarks. Yet taking the book simply as an exposition of St. Thomas and his orthodox following, and leaving out of count the apologetic, controversial and syncretic parts, it is careful, accurate, lucid, and full—almost overfull, and may be regarded as a valuable contribution to the history of philosophy. Certainly, after reading it, one finds other recent accounts of the metaphysic of the School, such as Cousin's, Jourdain's, and Haureau's, meagre and uninforming. The only work that may claim to equal it in merit of exhaustiveness is Kleutgen's *Philosophie der Vorzeit*, which is not accessible to English readers. F. Harper's work must therefore be welcomed as a decided acquisition, and stands almost, if not quite, unique among English books.

Encouraged by finding that "not a few men of information and study in English-speaking countries, even among such as have devoted themselves to physical pursuits, who, tired with the ever-rising Babel of new philosophies and with the universal disintegration of scientific