

Most of us do not yet feel that deliverance has come. The realists have, indeed, fought a good fight, but in our opinion they need all the help they can get from the kindly critic. Sometimes it is well for us to see our arguments as others see them. I may say, therefore, in all candor, that this paper is intended as a humble contribution toward the new realism.²

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EXPLICIT PRIMITIVES AGAIN: A REPLY TO
PROFESSOR FITE

I am indebted to Professor Fite for a very vigorous onslaught¹ upon my paper on "Foundations of Philosophy: Explicit Primitives";² I say indebted, because nothing conduces so much to making your views thoroughly understood as to have them violently attacked. I perceive that I must have been very obscure in this article, for Professor Fite has, if I mistake not, in some important points, quite misconceived my meaning; in others, I venture to think that he is somewhat in error.

For instance, when I use the term "explicit primitives" as a shorter form for the phrase "terms or propositions which are explicitly admitted as indefinables or indemonstrables" (since all time would not suffice to define everything, nor to prove everything)—that is, as *primitive* terms or propositions—I am far from meaning that the *signification* of the term, for instance, has been made *explicit*. What I mean is just the reverse—you *can not* set forth explicitly the meaning of *every* term, hence some must be taken for granted. Take the first definition of your treatise or your discus-

² This paper was written before the publication of "The New Realism" by the six "platform realists." In this book, Professor Perry again takes up the question of independence in a closely reasoned and admirable argument. The argument shows that reality need not be dependent on knowledge in the sense of standing to it in the whole-part relation or the exclusive causation relation, or of implying or being exclusively implied by it. The type of idealism which I have had in mind in the preceding paper would affirm none of these relations, but would simply raise the question whether the real can be conceived in any other than experience terms. In other words, if it must assert a relation between reality and experience, it would choose the *relation of identity*. Against this view (which seems to me the vital thing in Berkeley), Professor Perry's discussion in "The New Realism" is as unpersuasive as is his argument in "Recent Philosophical Tendencies."

¹ This JOURNAL, Vol. IX., page 155.

² This JOURNAL, Vol. VIII., page 708.

sion—provided that has logical sequence at all—the *definiendum* of your definition can not itself be defined, otherwise that first would not be first. It is well known to the logician that you can not, in one and the same treatise, define matter in terms of energy and energy in terms of matter. The two sentences which I quote from Clerk-Maxwell as an instance of a violation of this rule may, indeed, both, if they are true statements, *give information*, but they do not *both* answer the requirements of the definition. My simple rule is that all those terms which you decide to forego the defining of you must, for the convenience of the reader, make a list of at the beginning—you must not introduce them surreptitiously, you must set them out *explicitly* as primitive. When in the phrase “explicitly primitive terms, etc.,” I decide to use primitive as a noun, explicit necessarily becomes an adjective. But Professor Fite says (p. 155): “Briefly, my position would be that when a term has been made *explicit*, it is then a party to a comparison and is thus involved in a relation to another term.” But that is exactly what an “explicit primitive” is not. Hence it has not been shown that the phrase involves “a contradiction in terms.” I deny that I ought to fall under the same condemnation as Professor Fite’s students who insist upon it that in philosophy everything must be defined, when my very thesis is that not everything *can* be defined.

It is not to be denied, of course, that, in general, the terms (objects of thought) which constitute the subject-matter of your treatise or discussion will be far richer in meaning, will have a far greater number of marks attached to them, at the end of your work than at the beginning. It is true that we are far better acquainted with the character of Major Pendennis after reading Thackeray’s novel than before, but this fact has nothing to do with his definition. “To say quite definitely” (meaning very fully) “who, after all, the Major was” is not at all the same thing as to define him. It would be absurd to say that we are not far better “acquainted with” (to use Bertrand Russell’s term) parallel lines at the end of our reading of Euclid than at the beginning, but it does not follow that we shall have to change our definition of parallel lines. A term has been properly defined when such a congeries of its marks has been given as is sufficient to enable you to determine whether any freshly presented object will fall under this same head or not. It is not the function of the *definition* of a term to give all of its marks. Owing to the existence of Natural Kinds³ in this world of ours (the world of thoughts as well as of things) a limited number of marks will in general suffice to entail all the rest. “The character Thackeray

³ See “On Natural Kinds,” F. and C. L. Franklin, *Mind*, Vol. XIII. 1888.

was writing about at a given moment" would be a perfectly good *definition* of Major Pendennis, though it would give us very little information about him.

My paper on "Explicit Primitives" was written in haste and for a special purpose—after the appearance of the "Program of the Six Realists" and in time to serve as a brief prolegomenon to the proposed discussion at Cambridge last January. In that Program (as Professor Royce has since pointed out at much greater length) there are many concepts and propositions⁴ laid down implicitly as basis for the proposed discussion which are very far from being such as any non-realist could admit to be legitimate. If these had been explicitly set forth, this inadmissibility, it seemed to me, would have been quite apparent. I say in my paper (p. 711) that the makers of the program must have intended the discussion to be carried on solely among the neo-realists themselves. However, the appearance of my remarks in this JOURNAL prior to the meeting turned out to be unavailing, for I could not detect that they had been read by any of the participants in the discussion. (My contention was, of course, an old story to Professor Royce.)

But despite brevity, I should have thought it to be apparent that my subject of discourse was not the field of knowledge in general—discursive and of miscellaneous provenance—but merely any closed field of deductive, or chiefly deductive, reasoning. The proposed discussion, to which my paper was particularly *à propos*, was of this kind. I say: "It is, however [though I find them objectionable and question-begging], an immense advance in philosophical discussion to find definitions and postulates prepared beforehand." The discussion was to be prevented from being discursive, it was expected to *flow from* the definitions and postulates, which had been sent out beforehand to the members of the Association.

In view of all this, I am much surprised to find Professor Fite saying (as if it had any bearing on my article), "In a *system of thought*, no feature is necessarily prior to any other." Surely in any *system of deductive* thought, premises are necessarily prior to conclusions. If we are considering simply some miscellaneous collection of thoughts, not a system, the collection may be, it is true, without priority among its members. Your thoughts may happen to be all logically disconnected, to be all, so far as they are universal propositions, simple inductions, with no common terms giving rise to pairs of premises. They will be thoughts, none the less (a thought is best defined as an asserted relation between terms), but they will not constitute a system of thought. There is no system of thought

⁴For instance, "physical objects," that "different persons exist," etc.

without interrelations. There is no "system" of thought which does not contain at least some deductive reasoning. But deductive reasoning is non-symmetrical—unless, indeed, it is conducted in terms of the Antilogism (the Inconsistent Triad, as Professor Royce calls it), which, like the simple proposition "no a is b ," is purely symmetrical, destitute of right-and-leftness.⁵ This is, in fact, exactly such "a circular system of logic, a substitute for the rectilinear system of Aristotle," as Professor Fite says that he should be at a loss to invent.⁶ But, in general, premises entail conclusions, and a conclusion does not entail its premises—the belief that it does is what I have called⁷ the fallacy of the extended or of the compound Wrong Conversion—it is the same thing in propositions that ordinary wrong conversion is in terms. This is the simple fallacy upon which the doctrine of pragmatism is built up, and I am astonished to find Professor Fite adopting it as his own. We have need of a new term here—I propose the term (to be used in a technical sense) Confirmatory Evidence. If you have devised an hypothesis, and if you have been able to deduce (with the aid of second premises) a great many consequences from it, and if these consequences all turn out to be in conformity to fact, then you may be said to have strong *confirmatory evidence* of your hypothesis, but you can never reach proof in this way—and not even hypothetically. So if you start with an induction—if it yields you many consequences, and they turn out, upon testing, to be all true, you have gained additional probability for your original belief, but you have not proved it.

It happens that in some deductive systems, notably in logic and mathematics—and it is quite a curious fact—you come upon certain theorems which are "logically equivalent" to one or another of your chosen primitive propositions—either can be proved from the other (of course, with the aid of other axioms and theorems)— p , etc., involves q , but also q , etc., involves p . Whenever this occurs, it is matter of taste, of one's feeling for harmony, or beauty of development, whether one shall or shall not substitute this q for the p originally chosen as primitive.⁸ When this occurs, one may rewrite one's first chapter many times after finishing one's book—as many times as one's esthetic instincts demand. This never occurs in physics—in that science the game-aspect is not yet sufficiently in

⁵ See my paper on "The Implication," in the forthcoming number of the *Philosophical Review*.

⁶ See Schroeder, "Algebra der Logik," § 43.

⁷ *Loc. cit.*

⁸ When a theorem, q , is of this kind, Peano indicates that fact by the letters Pp in the margin—"possible primitive."

evidence—in spite of the fact that it has already become enormously deductive. We are told that a certain principle which was first Avogadro's happy guess, then Avogadro's rule, then Avogadro's hypothesis, and then Avogadro's law, is now a deduction from a great general dynamical theorem which applies to other things as well as to gases—the law of equipartition of energy.

The order of composition of a treatise, or of any piece of reasoning, is seldom the order in which it is finally presented to the reader. There is, for instance, not the slightest reason to suppose that when Euclid invented his geometry he first thought of his axioms and then deduced from them all his consequences. He doubtless set down first the well-known facts of geometry, and then let his imagination search about for more and more primitive propositions from which they could all be syllogistically deduced, until he could no farther backward go. This searching was an act of invention. But having got his best "first principles," he set down, for his reader, all his conclusions—his vast Sorites—in orderly form. He might have written a purely inductive treatise on geometry—in that case he would have saved himself all this toilsome labor of the reasoning mind. Any deductive system of thought is a sort of a game. One is not in search of knowledge simply—one is engaged in the task of seeing from how small a number of primitive premises all known-to-be-true propositions can be syllogistically deduced. The chief difficulty in overcoming the young person's instinctive dislike to geometry is in getting him or her to appreciate this little joke. "Do you have to *prove* every little thing like that?" said a recalcitrant student once in class. Young children do not reason (though I have plenty of experience to show that they can, upon occasion), because they have few universal propositions at their command, and in such as they have, "common terms" are either not present or not noticed.

The doctrine of coherence has, of course, an important rôle to play in logic, though not in the limited field of the hypothetico-deductive sciences. But my doctrine of *histry* I regard as better representative of the real nature of the validity of science (or knowledge) than the ordinary doctrine of coherence.⁹ By coherence I take its advocates to mean¹⁰ that no inconsistencies or contradictions arise in the course of knowledge—that we come upon no pairs of propositions like "no *a* is *b*" and "some *a* is *b*," which are mutually contradictory. But by the doctrine of *histry*, while I include such cases of incoherence as this, I mean to cover much more than simply these abstract, logical, inconsistencies, which seldom arise. Knowl-

⁹ See "Epistemology for the Logician," *Verhandlungen des III. Internationaler Kongresses für Philosophie, Heidelberg, 1908*.

¹⁰ Bertrand Russell, "The Problems of Philosophy," 1912.

edge starts with inductions, which are based upon facts. After many of these have been accumulated, it will happen that certain pairs of them contain a common term, in such a form that they are capable of constituting the premises of a valid syllogism. We draw the conclusion, and this conclusion we then submit to the test of fact, simple experiment, or, if they are applicable, refined laboratory methods. If, in a given case, the conclusion turns out to be true, the system has received, to this degree, confirmatory evidence. Thus the closely interwoven tissue of knowledge (hence the name, *histurgy*) is like a tree of many interlacing branches, which, though it may be for long stretches deductive, and abstract, is nevertheless, as a whole, constantly sending down shoots (like the banyan tree) into the solid ground of fact, and hence deriving incalculably strong support. It can appropriate to philosophical use that sentiment of Wordsworth which the journal *Nature* has taken for its device:

“ To the solid ground
Of Nature trusts the mind that builds for aye.”

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REVIEWS AND ABSTRACTS OF LITERATURE

The New History: Essays Illustrating the Modern Historical Outlook.
JAMES HARVEY ROBINSON. New York: The Macmillan Company.
1912.

It is probably not possible for an orientalist to review without favorable bias these charming essays in the interest of a larger and ever-growing outlook, both for the function of history and the method of writing it. That the arena of history was the scene of operation for a larger and more complicated array of forces than those included in the conventional list of categories set up by the majority of historians hitherto, is a fact which is inevitably forced upon the consciousness of the open-minded orientalist, especially if he be in any adequate degree historically minded. In order to discern anything at all of the career of man during long ages in the early east, the historian must often deal exclusively with *material* documents as contrasted with *written* sources. He sets up categories and works them through, which the traditional historical method does not employ, or with which it is even unacquainted. For him flint tools and copper implements are milestones stretching far back into past æons and often marking the course of the human career when all other sources fail. In the writer's student days in Germany we used to state apologetically that it was possible to write only "*Culturgeschichte*" in the field of early oriental history.

It is therefore very welcome to me to find this method proclaimed as