Bertrand Russell
(1872-1970)

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Bertrand Russell has exercised an influence on the course of philosophy in the twentieth century second to that of no other individual. And yet, unlike many influential thinkers, he has neither founded nor attached himself to any definite movement. His philosophizing is markedly empiricistic and analytical, but his independent spirit has always shied away from giving full allegiance to the movements that go under those titles. Although he has wanted above all to be empirical, he has always had reservations of one sort or another to the proposition that all of our common-sense beliefs can be derived from purely empirical premises. And although he has done as much as any man to give philosophy the analytical flavor it currently has in Anglo-Saxon climes, he has never embraced the thesis that philosophy is nothing but analysis.

Born in 1872, the offspring of a distinguished family (his paternal grandfather, Lord John Russell, was a prime minister who introduced the Reform Bill in 1832), Russell was educated at Cambridge University, where he studied mathematics and philosophy. At Cambridge he came into contact with men who were to have a decisive role in shaping his philosophical bent, notably G. E. Moore and A. N. Whitehead. Russell has had a very unconventional career for a twentieth-century British philosopher. It began properly enough with a fellowship and later a lectureship at Trinity College, Cambridge. This academic career was interrupted in 1916, when his fellowship was terminated because of his active opposition to the war effort — activities which eventually resulted in a six months' prison sentence. Since that time Russell has supported himself almost entirely by writing and lecturing. As this might suggest, his writings have not been confined to analytical philosophy. They include works on politics (*Freedom and Organization*; *Power: A New Social Analysis*), education (*Education and the Social Order*), religion (*Religion and Science*; *Why I Am Not a Christian*), as well as popular expositions of scientific theories (*The ABC of Atoms*; *The ABC of Relativity*). His trenchant views on sexual morality (*Marriage and Morals*) have attained notoriety out of all proportion to their relative importance in his life work. In recent years he has produced a volume of short stories (*Satan in the Suburbs*) and a book of satirical sketches (*Nightmares of Eminent Persons*). (This is only a small sample of the writings in these categories.) Nor have his activities been confined to the written word. As he tells us, "I grew up in an atmosphere of politics, and was expected by my elders to take up a political career."[1] Although his only attempts at a political life were unsuccessful bids for Parliament in 1907, 1922, and 1923, he has repeatedly engaged in public affairs in a less official way. Whenever a major issue confronts the world, Russell's voice can be heard, the latest example being his efforts on behalf of a ban on H-bomb testing.

Russell's first major philosophical concern was the philosophy of mathematics,

though, characteristic of the spread of his interests and activity, his first book was German Social Democracy, and his first purely philosophical work was *A Critical Exposition of the Philosophy of Leibniz*. He has said: "I came to philosophy through mathematics, or rather through the wish to find some reason to believe in the truth of mathematics. From early youth, I had an ardent desire to believe that there can be such a thing as knowledge, combined with a great difficulty in accepting much that passes as knowledge."[2] This may seem a strange motivation for the study of philosophy, but Russell had to a high degree the gift, which has been called the specifically philosophical gift, of finding problems where to others all is clear and simple. This drive eventually led to Russell's part in one of the major intellectual achievements of this century, *Principia Mathematica* (1910-1913), which Russell co-authored with A. N. Whitehead. In this work the authors (with certain reservations that we need not consider here) claim to derive logically all pure mathematics from certain definitions and axioms of formal logic.

With the completion of *Principia Mathematica* Russell was free to pursue other philosophical interests. In the course of carrying out the reduction of mathematics to logic, a new logic and new tools of logical analysis had been developed; and Russell was quick to see applications of these techniques to philosophical problems outside mathematics. These applications led straight to the sort of philosophy Russell called "logical atomism." "I hold that logic is what is fundamental in philosophy, and that schools should be characterized rather by their logic than by their metaphysic. My own logic is atomic, and it is this aspect upon which I should wish to lay stress."[3]

…The achievement of *Principia Mathematica* can be expressed in the following way. Mathematical concepts, that is, numbers, are reduced to (analyzed in terms of) logical concepts. A pattern of definitions is set up such that anything we say involving numbers can be restated in such a way that numerals do not appear in the restatement, but instead terms belonging to the logical frame-work of language — "and," "or," "not," "there is something that ," "is identical with," etc. For example, "I have exactly one car" can be restated as follows: "There is something that is a car belonging to me and that is such that anything that is a car belonging to me is identical with it." And "I have exactly two cars" would become "There is an entity, x, and an entity, y, such that x is my car and y is my car, and such that x is not identical with y and for anything, if it is my car, it is identical either with x or with y." (The restatements of purely mathematical statements, even simple ones like "2 plus 2 equals 4," are too complicated for illustration here.) These translations are typical in that the numerals are not simply replaced with logical terms; instead, the whole sentence needs rewriting. And of course different sorts of sentences need rewriting in different ways. This technique was called "contextual definition." It involves giving an equivalent for a kind of context in which the term in question appears, rather than giving an equivalent for the term that could be substituted for it in any context.

Now what value does this have, other than as an exercise in logical ingenuity? What is the point of talking mathematics without numerals rather than with? Why reduce numerals to logical terms rather than vice versa? There seem to be several different answers to this question.

1. *Economy*. If *Principia Mathematica* is correct, all mathematical discourse can be expressed by the use of logical terms; but the converse obviously does not hold, for logical terms occur in all sorts of discourse constituting the basis skeleton of all utterance. This means that we can get along with logical terms and no numerals, but not vice versa. Thus, if we are seeking the minimum set of terms by means of which everything can be expressed,

we will take the logical version of "I have exactly two cars" to be more fundamental.

2. *Clarity*. Logical concepts are clearer than mathematical ones; for example, there are puzzling paradoxes that arise over mathematical terms but disappear when the restatement is made in the most basic logical terms. It is always a gain to move from a relatively unclear to a relatively clear way of stating things.

3. *Certainty*. Here the point is not that statements in logical terms are in general more immediately certain than those in arithmetical terms. (It would be difficult to find something more evident than "2 plus 2 equals 4.") Russell came to see that the reduction did not really achieve his original objective of finding "some reason to believe in the truth of mathematics." "When pure mathematics is organized as a deductive system ... it becomes obvious that, if we are to believe in the truth of pure mathematics, it cannot be solely because we believe in the truth of the set of premises. Some of the premises are much less obvious than some of their consequences."[4] The gain in certainty has to do with the sorts of entities assumed. Russell felt that in its traditional formulation mathematics assumed the existence of various entities, such as numbers and infinite classes, the existence of which, since it could not be supported by experience, was dubious. In the logical formulation, as he conceived it, these assumptions were not made, and so a basis for doubt was removed. (Just what sorts of entities are assumed in the more basic formulation, and just how certain their existence is, is less clear here than in certain other reductions we shall be considering.)

Russell soon saw that the technique of contextual definition could be applied to philosophical problems outside mathematics. There are many other areas in which we believe in entities, the existence of which are not certain by Russell's somewhat refined standards, and in which Russell thought that our ways of talking gave rise to baffling puzzles, for example, universals, physical objects, and the ego. Now just as no one suspected that numbers could be defined by logical terms before the techniques of the new logic were turned on them, so in these cases we might be able to show that statements about these entities can be translated into statements about more certain, less puzzling entities. Thus Russell sought to reduce physical objects to immediate data of sensation,[5] and the ego to images and sensations.[6] In all such cases, to say that x is reduced to y (or, what comes to the same for Russell, to say that x is constructed out of y) is to say that schema are provided for translating statements about x into statements about y. And the point in all these cases is the replacement of entities that have been inferred by more or less dubious arguments, with "logical constructions" out of entities that are clearer and less uncertain. The maxim of this procedure is: "Wherever possible, substitute constructions out of known entities for inferences to unknown entities."

However, logical constructionism does not suffice to constitute logical atomism. The technique of logical constructionism is one which can be employed in the service of a great variety of philosophical viewpoints. One can seek to construct physical objects out of sense data, or, alternatively, out of monads, ideas in the mind of God, or regular solids. One can seek to construct mental acts (thinking, deciding, wishing) out of responses of muscles and glands, nerve currents, faculties of the soul, or sensations. And one can simply use the technique ad hoc for the solution of various particular problems without being guided by any over-all philosophical viewpoint. Logical atomism is a comprehensive philosophical viewpoint resulting from restricting in certain ways the termini, and hence the direction, of logical analysis. The restrictions concern both (1) the logical form and (2) the concrete filling of the termini of analysis.

1. Looked at in one way, logical atomism is the working out of the assumption that

the logic of *Principia Mathematica* provides the skeleton of an ideal language. In such a language the simplest form of statement is that in which we have a predicate and one or more designative terms, the whole statement asserting the entity designated has the property indicated by the predicate, or that the entities designated are related by the relation indicated by the predicate. ("This is red," "This above that.") Now in the strictest form of logical atomism, exemplified by Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*,[7] it is held that all other statements are truth functions of atomic statements, that is, that they are made up of atomic statements in such a way that their truth or falsity is a definite function of the truth or falsity of the constituents just as the truth or falsity of the conjunction, "This is red and that is round" is determined by the truth status of "This is red" and of "That is round." Russell was never a good party man, and he had reservations about both general statements and statements about cognitive states like belief and perception (see Lectures IV and V; for the struggles Wittgenstein went through in order to avoid these exceptions, see *Tractatus*, 5.521-5.525; 5.541-5.542). But even in Russell's form logical atomism was committed to the attempt to construe as many statements as possible as truth functions of atomic statements, the point being that this provided a clear and unproblematic way of exhibiting the structure of complex statements.

2. But the specification of the logical form still leaves open what names or predicates can be inserted. "God is omnipotent," "Socrates was the master of Plato," "Dobbin is grey," "Bertrand Russell is a logical atomist," all equally satisfy the purely formal requirement. But Russell would regard none of these sentences as really atomic. He employed a further criterion of admissibility, which was formulated as follows (under the heading "Principle of Acquaintance"): "Every proposition which we can understand must be composed wholly of constituents with which we are acquainted."[8] This was meant to give an empiricist direction to the theory. It reflected the conviction that all knowledge is based on experience, so that to replace unknown entities with constructions out of known entities is to get back to entities of which we have direct experience. In this aspect logical atomism is a continuation of the British empirical tradition. It differs from past forms precisely in seeking not to infer other entities from the data of experience, but rather to render such inferences needless by showing that the supposed other entities are nothing but complexes of experienced data.

This clearly rules out "God is omnipotent" (provided we can distinguish religious experience from the sort that is in question here), and also "Russell is a logical atomist," on the grounds that being a logical atomist is not a property of whose presence we can be directly aware. What about "Dobbin is grey"? To see what is wrong with that we have to make explicit the fact that Russell's empiricism is in the phenomenalistic tradition of Hume and Mill. Although there are empiricists who suppose that we directly experience houses, stones, trees, and people and are perfectly content to take these as ultimate data, the more critical empiricism of the Hume-Mill school finds the existence of physical objects dubious, and is constrained to look deeper for directly (infallibly) experienced items. They find such items in sense data, such as a particular smell, noise, or patch of color. It is only names of sense data, then, which will be allowed in the atomic sentences of the ideal language, together with predicates signifying properties of sense data or relations between them. And then the program will be to show how everything we want to say about the world can be expressed in terms of combinations (preferably truth-functional) of such sentences.

So far I have presented logical atomism as an attempt to effect linguistic transformations of a certain sort, for predominantly logical and epistemological motives. And it certainly is that. But there is also a metaphysical side to it. Long before Russell gets to his eighth

lecture, "Excursus into Metaphysics: What There Is," he is making inferences from his logical doctrines to the metaphysical structure of the world. Behind these inferences is another fundamental principle of logical atomism, that in a logically perfect language there would be an identity of structure between a true proposition and the fact that it asserted. Thus Russell lays it down, "That the components of the fact which makes a proposition true or false, as the case may be, are the meanings of the symbols which we must understand in order to understand the proposition."[9] Wittgenstein in the *Tractatus* makes this point by saying that a proposition can represent a state of affairs only by *picturing* it,[10] though it is not at all clear what he means by picturing.

If this is the case, we can draw inferences from the structure of the basic true atomic propositions to the structure of the ultimate atomic facts that make them true, and the constituents of these facts will then be the ultimate constituents of the universe. Thus the claim that Russell's language is an ideal language carries with it the claim that the ultimate constituents of the universe are sense data and immediately discernible properties of and relations beween sense data plus some distinctive sorts of mental entities, the exact nature of which is not made clear.

Then what of the "incomplete symbols" to be eliminated by the reduction to atomic propositions, for example, words purportedly designating physical objects, persons, and numbers? What does Russell want to say about their metaphysical correlates or the lack thereof? In other words, what is the metaphysical correlate of the logical statement that physical objects are logical constructions out of sense data or that properties are logical constructions out of classes of similar individuals? What metaphysical status, if any, does this give physical objects and properties? There seems to be a strain in the Russellian philosophy at this point. At times Russell talks as if what we have here is a simple straight-forward problem as to what does and does not exist, and that by reducing chairs to sense data he has shown not that chairs do not exist, that would be too strong a claim, but at least that we need not assume that they do, that we can say everything we want to say without saddling ourselves with that assumption. "In that way the desk is reduced to being a logical fiction, because a series is a logical fiction. In that way all the ordinary objects of daily life are extruded from the world of what there is, and in their place as what there is you find a number of passing particulars of the kind that one is immediately conscious of in sense. I want to make clear that I am not denying the existence; I am only refusing to affirm it."[11] When writing in this vein, Russell gives the impression that the main value he attaches to his method is the way it enables us to reduce the number of kinds of things we assume to exist, and thereby reduces the risk of error.

But when the theory of types is in the foreground, Russell presents the enterprise in a different light. This theory, one of Russell's most important contributions to logic, segregates expressions into types such that the substitution of one expression for another in a larger expression can be made only if both expressions are of the same type; otherwise the result will not be meaningful (for a summary of the problems that drove Russell to insist on this restriction, see Lecture VII). On this approach, terms for classes are always of a different type from terms for their members. And if we remember that according to Russell the sorts of entities he is treating as logical constructions generally turn out to be classes of one sort or another, we can see that a term designating this chair, for example, will be of a different logical type from a term designating any of the atomic particulars that are the ultimate constituents of such classes. Hence we cannot substitute "chairs" for "sense data" and get a significant proposition. This leads Russell to call the supposition that

there are classes, in the same sense of "there are" in which there are sense data, not false, but meaningless. "There are particulars, but when one comes on to classes, and classes of classes, and classes of classes of classes, one is talking of logical fictions. When I say there are no such things, that again is not correct. It is not significant to say "There are such things," in the same sense of the words "there are" in which you can say "There are particulars." But there is another side to the coin. "If I say 'There are particulars' and 'There are classes,' the two phrases 'there are' will have to have different meanings in those two propositions, and if they have suitable different meanings, both propositions may be true."[12]

If the theory of types is applied in this way, it knocks the props from under the previous metaphysical interpretation of logical constructions. Recall that on that interpretation the "reduction" of physical objects to sense data enables us to sidestep the question of the existence of physical objects — enables us to carry on our business, theoretical as well as practical, without making any assumption on that point. But, given the above application of the theory of types, it is impossible that the reduction could have any such import. If in saying "There are physical objects," we are using "there are" in the sense in which there are sense data, then we are talking nonsense; there is no question at all, open or closed.

On the other hand, if we are using "there are" in a sense appropriate to physical-object types of expressions, then what we are saying is presumably true; and in any event the translation of physical-object statements into sense-data statements could do nothing to show that the existence of physical objects can be left undecided, in that sense of existence. We can represent the problem as a straight-forward problem as to what there is only so long as we suppose that a single sense of "there is" is applicable to entities of all sorts. From this second angle the metaphysical significance of the reduction lies precisely in its revelation of the difference between the modes of existence of phvsical objects and sense data, in showing that whereas the latter exists in a fundamental way, the former have only a derivative sort of being. Thus Russell will sometimes put his position in the form of a denial that physical objects are among the "ultimate constituents of the universe."

But just what is the difference between the sort of existence physical objects have, and the sort of existence which sense data have? In Lecture VII, Russell raises this question with respect to classes, and his answer simply consists of showing, in outline, how sentences containing class terms are to be translated into sentences containing no class terms. This seems to mean that to say that classes have a derivative mode of existence is simply to say that sentences containing class terms can be translated into sentences containing no such terms; that is, it is to say that terms of that type are eliminable. But if this is so, then the metaphysical import is nil; it is just a garnish that adds nothing to the substance of the position. "Classes have a derivative mode of being" is just a pretentious restatement of "Class words are eliminable," and nothing more. Russell himself suggests such a conclusion when he says "All those statements are about symbols. They are never about the things themselves. . . ." But, as we have seen,
he is very far from consistently carrying it out. It would seem that Russell will have to give up, or radically reconceive, the theory of types, or else frankly abandon any metaphysical pretensions. The latter course is taken by the much more extreme *Tractatus*, although Wittgenstein does so in a characteristically paradoxical way. After setting out logical atomism in much more explicitly metaphysical terms than those used by Russell, he argues, on grounds somewhat akin to the theory of types, that one cannot say anything about the relation of language to reality (which is what metaphysics comes down to in

logical atomism). This can only be shown in language, not said by it.[13] Then what has Wittgenstein been doing all through the book? Such answer as we have to this question is contained in the cryptic conclusion to the book. "My propositions are elucidatory in this way: he who understands me finally recognizes them as senseless, when he has climbed out through them, on them, over them. (He must so to speak throw away the ladder, after he has climbed up on it.) He must surmount these propositions; then he sees the world rightly. Whereof one cannot speak, thereof one must be silent."[14] Such mystification did not appeal to Russell, but it is difficult to see what alternative he has.

According to C. D. Broad, "As we all know, Mr. Russell produces a different system of philosophy every few years. . . ." At best this is an oversimplification; as pointed out above, Russell has remained a more or less empiricistic constructionist throughout his career. But it is true that Russell has never hesitated to publicly change his mind on particular points. However, although Russell has not often used the label "Logical Atomism" since the twenties, I do not believe that the philosophy expressed in his major works of the forties, *An Inquiry into Meaning and Truth* and *Human Knowledge*, is vastly different from that contained in the present selection. The major differences are the following.

First, "neutral monism," with which he carried on an unsuccessful flirtation in the present work, was largely accepted from the *Analysis of Mind* (1921). At least from that time Russell gave up any dualism of mental acts and their objects, and took as his sole ultimate particulars sense data and entities of not radically dissimilar kinds, namely, unsensed sense data and images. This differs from a more extreme neutral monism only in retaining images as a kind of entity that is peculiarly mental.

Second, the particular-universal distinction has undergone a radical shift. Dismayed by the unempirical and paradoxical character of the notion of an ultimate substratum of qualities (Locke's "I-know-not-what which underlies qualities"), Russell has proposed to take sensed qualities, and bundles thereof, as the referents of proper names. On this new theory, "This is red" will be analyzed not so that "this" refers to a sense datum that "has" qualities like redness, but rather as "Red is a member of this," where "this" refers to a comprerent group of sensed qualities (for example, red, round, in the middle of the visual field, having ragged edges). In this interpretation both "red" and "this" are proper names of qualities or complexes of qualities.

But although Russell remained faithful to the basic tenets of logical atomism, the same cannot be said of his former comrades, particularly Wittgenstein and John Wisdom.

References

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2. Bertrand Russell, "Logical Atomism," in R. C. Marsh (ed.), *Logic and Knowledge*. London, Allen & Unwin, 1956, p. 323.

3. hoc. cit.

4. Ibid., p. 325.

5. See Lecture VIII below, and for a more detailed account, Bertrand Russell, *Our Knowledge of the External World*, Chicago, Open Court Publishing Co., 1914; and the essays "The Ultimate Constituents of Matter" and "The Relation of Sense-Data to Physics," reprinted in Bertrand Russell, Mysticism and

Logic, London, Longmans, Green, & Co., 1918.

6. See Bertrand Russell, *The Analysis of Mind*, New York, The Macmillan Co., 1921.

7. Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, New York, Harcourt, Brace & World, Inc., 1922.

8. Bertrand Russell, *The Problems of Philosophy*, New York, Holt, Rinehart & Winston, Inc., 1912, p. 91.

9. Infra, p. 313.

10. Wittgenstein, op. cit., 4.01, ff.

11. Infra, p. 374.

12. Infra, p. 367.

13. Wittgenstein, op. cit., 4.12-4.1212.

14. Ibid., 6.54-7.