The Principles of Mathematics (1903) ignoring Russell's work on geometry and Leibniz. Chapters 2 through 8 are divided into three chronological sections. The high-powered logical apparatus and the implications Russell saw in it for ontology and the logicist connection between mathematics and logic are of primary concern in Chapters 2-4. Russell's atomism of the 1910s might have been better discussed in chapters where the theory of logic and language and the theory of knowledge are discussed together. As these topics are interdependent, the separation made in Chapters 5 and 6 is misleading. Jager concedes such a division is "artificial ..., but [it is] a possible and convenient one" (p. 225). It is clearly convenient. That it is a possible one Jager bases on the fact that the theory of descriptions is the groundwork of both. But that is all the more reason not to separate these two connected aspects of Russell's work. Chapters 7 and 8 deal with Russell's work from 1921 on. The development from The Analysis of Mind (1921) to Human Knowledge: Its Scope and Limits (1948) is probably one of the most important and interesting philosophical undertakings of this century. It is unfortunate that much of Russell's later work, especially Human Knowledge, is generally ignored. It is more unfortunate that Jager does little to remedy this—consider his spending eight pages (410-18) on the most original part of that book, the 88 pages of Part VI on the Postulates of Scientific Inference. His comment about the most crucial of Russell's postulates is the following passing remark: "... the second is the postulate of separable causal lines" (p. 414). Causal lines are so important in Russell's later work that this statement is analogous to a commentator on Aristotle reporting: "Aristotle had a notion of 'substance'."

The inclusion of the topics of Chapter 9 and 10 is surprising considering what Russell said in 1944: "I should like to exclude all value judgments from philosophy, except that this would be too violent a breach of usage." For him, "Theory is the business of philosophy", but no theoretical argument is possible in ethics. The same seems true of the other topics in the final chapters. Perhaps this is why Jager does not even attempt to incorporate them into the earlier, more technical chapters. And if they do not fit into the overall scheme of Russell's philosophy, what requires their inclusion in a work showing the development of Russell's philosophy? Jager wants to show the reciprocity between Russell's technical and more general philosophy (p. 45). The last chapters are written to that purpose. And some points of psychological

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1. "Reply to Criticisms", in P.A. Schilpp, The Philosophy of Bertrand Russell, 4th edn. (La Salle, Ill.: Open Court, 1971), p. 719. This is one of Russell's very few condescensions to ordinary usage.

2. Russell, "Dr. Schiller's Analysis of The Analysis of Mind", Journal of Philosophy, 19 (1923), 646.
connection are made quite well: the political freedom of the individual with Russell's atomistic theory; his liberalism, tentatively held, and his undogmatic, scientific approach to philosophy; the way Russell's libertarianism influenced his educational ideals. Most important is the connection and contrast between mysticism and logic. It is clearly pointed out that if Russell had a religion, it was mathematics and the high priest was logic. But we must see the cleric in him as tempered with a passionate humanism and wonder at his self and the world.

The chronological approach helps to show the development in Russell's thought. Jager discusses how logical atomism, in Russell's second phase, is a modification of the early metaphysics. He mentions, but deliberately does not discuss, the development of Russell's ideas by other philosophers, e.g. by Carnap and Goodman, and stresses how much twentieth-century philosophy can be traced to Russell, a generally conceded point.

There is a problem in Jager's treatment of Russell's neutral monism: Jager does not stress important changes in the theory from 1921 to 1927. Yet the influence of science on Russell is crucial to an understanding of The Analysis of Matter (1927), and it is not until the discussion of Human Knowledge that Jager seems to realize that, for Russell, science became the essence of philosophy (p. 418). Russell employed scientific methodology in philosophy as early as Our Knowledge of the External World (1914). But it is only in The Analysis of Matter, after The ABC of Atoms (1923) and The ABC of Relativity (1925), that the results of science, and their implications for philosophy, are examined. Russell's 1927 work is very much a part of his later philosophy and is best viewed as the beginning of his later period. The similarities between the 1921 and 1927 works are clear; the change is really one of emphasis (from psychology to science). The link between The Analysis of Matter and Human Knowledge is even more obvious. Even after stressing the differences between these works, the connection and development of the one to the other can be clearly shown.

There is a second problem in the treatment of Russell's neutral monism: it arises from not seeing the far-reaching interconnectedness of Russell's works. Jager claims that

The syllabus distributed for the London version of the course of lectures which formed the basis of The Analysis of Mind contains an objectionable clause not in the book: "sensations ... have physical causes and mental effects". (P. 335)

First, in the book Russell does say "Those [events] that have physical causes and mental effects we should define as 'sensations'" (p. 138). So the objectionable clause does appear. Now, granted, on the next page Russell expresses doubt as to the adequacy of such a definition. But his doubt is based upon the notion of cause ("we cannot, in general, point to anything unique as the cause of such-and-such an event"), and the imprecision of the distinction between psychological and physical causal laws. Russell's obvious point is that since the distinction between mind and matter is not sharp, any definition employing these terms cannot be sharp either. Secondly, there is a misleading tendency of Russell's in this book to slip between two uses of "sensation": (1) to mean the sensory core of perception; and (2) the theoretical use of "sensation" in which Russell defines it as his neutral stuff, the intersection of mind and matter. It is difficult to reconcile these two uses. When Russell opts, in Lectures VII and VIII of The Analysis of Mind, for a definition of sensation as the sensory core of perception, he is clearly being unfaithful to his theoretical (monistic) principles. Perception is a dualistic notion: as Jager points out, "... perceptions are pegged to objects" (p. 355); for Russell, these are external objects. It is preferable to press Russell on his first principles and insist he make as much use of his theoretical bases as possible. If problems are found along the way, they should be dealt with or, failing that, the theory modified or abandoned. Russell did modify his theory and, in The Analysis of Matter and Human Knowledge, "percepts", or actual experiences, become his data, not sensations. In Human Knowledge, Russell discusses sensations as on a par with Hume's impressions. Sensations are mental occurrences and have "a proximate cause which is external". Does Russell doubt for a minute that sensations have physical causes and mental effects? This depends only upon the use which Russell is making of the term and is a problem which he makes for himself. It is not, however, a problem which should be overlooked.

A source of possible confusion occasionally occurs in Jager's wording. It is misleading, if not just wrong, when Jager says that in Russell's logical atomism the notion of existence "dissolves ... into the use of a proper name or into the logical notion of the truth or falsehood of a propositional function" (p. 258). Propositional functions can never be true or false; only propositions can be. So what Jager must mean is the true or false instantiation of a propositional function, but that is not what he says.

As an introduction to Russell's philosophy, the book is adequate. As far as scholarly reporting goes, there are some errors--a blatant one is in the bibliography. Some fault for this must lie with the publisher's reader who did not find the errors and demand corrections. One cannot expect a publisher's reader to know all of Russell's works;
but how difficult would it have been to discover that his article "The Monistic Theory of Truth" (reprinted in *Philosophical Essays*) first appeared as "The Nature of Truth" in the *Proceedings of the Aristotelian Society*, 1906-7, and not as Jager has it in *Mind* 1906? Such errors are avoidable and should be avoided in any serious work.