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Review

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Review: Gregory Landini's Russell

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Until recently, there has been a significant lacuna in the secondary literature on Russell: we have been missing a substantial, up-to-date, introductory book on Russell, accessible to students, covering the full range of his philosophical interests and contributions. To be sure, there has been a large upturn in the amount of historical works dedicated to Russell's philosophy in the past 20 years, and many high quality works have been produced. By and large, however, they are written by specialists for specialists, and most deal with a particular narrow aspect or time-frame of Russell's career. Examples that come to mind are Nicholas Griffin's *Russell's Idealist Apprenticeship* and Bernard Linsky's *Russell's Metaphysical Logic*. Those that do aim to be accessible to students either are too short to fill the void (such as Strathern's *Bertrand Russell in 90 Minutes* or Ray Monk's *Russell*), or oversimplify Russell's philosophy to the point of distortion (as I believe is the case with Soames's *Philosophical Analysis in the Twentieth Century: The Dawn of Analysis*). This means that the best-known comprehensive general introductions to Russell's philosophy are now terribly dated, such as D. F. Pears's *Bertrand Russell and the British Tradition in Philosophy*, which appeared in 1967, and A. J. Ayer's *Bertrand Russell* of 1972.

Gregory Landini's recent book *Russell*, from the Routledge Philosophers series edited by Brian Leiter, is, I think, the first serious attempt to fill this void. The book opens with a chapter entitled "Life and Work," which gives a very sympathetic and engaging account of the chronology of Russell's philosophical writings and the events surrounding them. While it focuses largely on the development of his major philosophical works, it also addresses briefly Russell's political activism and turbulent love life. I can easily imagine this chapter becoming the go-to source for those needing a brief but capable philosophical biography of Russell.

The next chapter, "Mathematics and the Metaphysicians," provides a philosophical overview of Russell's philosophy of mathematics and endorsement of logicism. Landini portrays Russell's logicism as the thesis that mathematics reduces to the general science of relational structures. Russell's understanding of number is characterized largely in terms of quantificational structures, and is contrasted with those who understand mathematics as requiring a special postulated ontology of distinctly mathematical entities. Perhaps the most interesting and original part of the chapter is Landini's defense of Russell's form of logicism against the charge of "if-thenism" leveled by Boolos and others. In abandoning the search for *a priori* reasons for believing in an infinity of entities, in *Principia Mathematica* (*PM*), Whitehead and Russell were forced to leave the Axiom of Infinity as an undischarged antecedent on various results. Indeed, they were not able to obtain outright that no natural number is identical to its successor without Infinity as an assumption. Boolos had claimed that this reduces their logicism to the trivial standpoint that mathematical theorems can be logically deduced from mathematical premises, which would not differentiate mathematics from empirical sciences. Landini argues convincingly, however, that Russell instead meant to endorse a revisionary account of arithmetic according to which it ought not be taken as a necessary mathematical truth outright that there are infinitely many numbers, but only that there would be under certain conditions. Landini makes an analogy to contemporary understandings of geometry whereupon it is no longer regarded as a mathematical necessity that there are Euclidean triangles.

In the third chapter, dedicated to the first edition of *Principia Mathematica*, Landini summarizes the controversial interpretation of *PM* and its development given first in his earlier book *Russell's*

Hidden Substitutional Theory (Oxford 1998). According to it, the formal syntax and type theory of *PM* is much simpler and more straightforward than the baroque systems resulting from more traditional interpretations of its ramified type theory, such as that of Alonzo Church. Landini argues, for example, that *PM* employs predicate variables only of predicative types, and that there are no terms (e.g., "circumflex terms") apart from variables. Landini also argues, convincingly, that *PM*'s no classes theory should not be read as endorsing a metaphysical reduction of classes to other kinds of entities, but rather as a kind of "elimination" in which class-talk is replaced by a partial proxy using higher-order quantification, but nothing whatever is thought to remain of the ontological status of classes. The chapter contains some very detailed examinations of conventions regarding the elimination of contextual definitions or "incomplete symbols" in the logic of *PM*, which may be too in-detail or intimidating to the beginning reader, however insightful. Landini also outlines in great detail a recursive semantics for the higher-order language of *PM* which combines a nominalist or substitutional treatment for higher-order "propositional function" variables with a realist or objectual construal of individual variables. He notes, however, that the semantics sketched does not validate *PM*'s Axiom of Reducibility, leaving a glaring unresolved problem for *PM*'s project.

The second half of the chapter sketches the pre-*PM* development of Russell's approach to logic and the foundations of mathematics, beginning with 1903's *Principles of Mathematics* (*PoM*). Landini argues that the theory of quantification given in *PoM*—the theory of denoting concepts—involved an obscure account of propositional structure, and that frustration with this view led to Russell's well-known theory of descriptions from 1905's "On Denoting." The latter view, with its endorsement of contextually defined "incomplete symbols" provided the inspiration for the no classes theory, originally framed within Russell's "substitutional" theory of classes and relations in extension. This approach revolved around a four place relation $p\frac{x}{a}!q$ meaning that the proposition q results from proposition p by the substitution of the term x for term a wherever it occurs as a logical subject in p. This theory employed only one style of variable, but emulated a logic allowing quantification over higher-order attributes in intension employing a simple theory of types by replacing talk of an attribute ϕ with a pair of entities p and a, i.e., a proposition and an entity to be substituted-for within it. Such a pair Russell calls a "substitutional matrix."

Landini argues, contrary to traditional interpretations, that the genesis of the ramification of *PM* came not from a desire to solve linguistic or psychological "semantic paradoxes," but rather from the desire to solve certain paradoxes of propositions specific to the substitutional theory. The most recalcitrant of these, found in a 1907 letter to Hawtrey, is an antinomy Landini dubs the "p_0/a_0" paradox. The paradox stems from noting that each pair of entities p and a making up a substitutional matrix can be correlated with a distinct proposition, such as the proposition $p \supset a$ (that p implies a). By Cantor's theorem, however, there should be more propositional matrices (which can be used to provide a proxy for class-talk) than individuals (including propositions), and so this ought to be impossible. In the substitutional theory, it is possible to define a proposition p_0 and entity within it a_0, so that an entity substituted for a_0 in p_0 yields a truth just in case it is a proposition of the form $p \supset a$ but does not satisfy the matrix consisting of p and a. If we then consider whether or not the proposition $p_0 \supset a_0$ yields a truth when substituted for a_0 in p_0 we arrive at a contradiction. To solve this and related antinomies, Russell first considered abandoning general propositions as entities (as in the paper "On 'Insolubilia' and Their Solution by Symbolic Logic"), and then considered dividing propositions into a ramified hierarchy (as in "Mathematical Logic as Based on the Theory of Types"), and finally came to reject propositions as mind- and language-independent entities altogether in favor of the multiple relations theory of judgment and a recursive account of truth for quantified statements outlined in *PM*'s introduction, which provided

the undergirding for ramification.

One aspect of Landini's reading of the chapter that seems to me mistaken is the mismatched semantics given for individual as opposed to higher-order variables. It seems to me that the best evidence we have that Russell endorsed any kind of substitutional semantics fairly clearly shows that he intended a substitutional account for individual variables as well. Consider this passage, which Landini himself quotes in favor of his view:

> That the words "true" and "false" have many different meanings, according to the kind of proposition to which they are applied, is not difficult to see. Let us call the sort of truth which is to be applicable to ϕa first truth. ... Consider now the proposition $(x).\phi x$. If this has the sort of truth appropriate to it, that will mean that every value ϕx has first truth. Thus if we call the sort of truth that is appropriate to $(x).\phi x$ second truth, we may define $\{(x).\phi x\}$ has second truth as meaning every value for ϕx has first truth, i.e. $(x).(\phi x$ has first truth). (*PM* p. 42)

Russell is almost certainly making a general point about variables of every type, but the fact that he uses the letter "x" here is telling. Conventionally, that would be used as an individual variable. Despite the sloppy presentation by contemporary standards of observing the use/mention and metalanguage/object language distinctions, Russell here seems to be saying that a formula of the form $\ulcorner(x).\mathscr{A}\urcorner$ is true just in case $\ulcorner\mathscr{A}[n/x]\urcorner$ is true for every name n.

Landini rightly puts Russell's doctrine of the unrestricted variable and his contention that every genuine entity is capable of occurring as logical subject at the center of his discussion of the development of Russell's views on philosophical logic leading up to *PM*. But I think he is wrong to think that interpreting these doctrines requires treating the individual variables in a non-substitutional way. Russell was an ideal language philosopher, and described *PM* as the logical core of what would become an ideal language if one added a vocabulary. To understand the mathematics of *PM*, one must understand only the logical vocabulary, but nonetheless, Russell claims that an extra-logical vocabulary is needed "for giving values to the variables" of mathematical logic (see *Introduction to Mathematical Philosophy*, p. 201), and claims that even his theory of descriptions does not make it unnecessary for a language to contain a name for all particulars (*ibid.*, p. 183). Russell describes his logically ideal language thus:

> I propose now to consider what sort of language a logically perfect language would be. In a logically perfect language the words in a proposition would correspond one by one with the components of the corresponding fact ... In a logically perfect language, there will be one word and no more for every simple object, and everything that is not simple will be expressed by a combination of words, by a combination derived, of course, from the words for the simple things that enter in, one word for each simple component. ... The language which is set forth in *Principia Mathematica* is intended to be a language of that sort. It is a language which has only syntax and no vocabulary whatsoever. Barring the omission of a vocabulary I maintain that it is quite a nice language. ("The Philosophy of Logical Atomism," from *Logic and Knowledge*, p. 197)

The requirement that every individual have a name in a logically ideal language, I think, is Russell's way of ensuring that no entities are "left out" from a substitutional account of quantification for individual variables. From this standpoint, the individual variable is unrestricted as every individual falls in its range. Other kinds of variables are understood substitutionally as well, but things are different there insofar as their substitution instances are not names of entities, but meaningful in a different way.

Landini presents what he himself describes as a revolutionary re-understanding of Russell's Logical Atomism in the following chapter. Landini argues that Russell's relatively short-lived ontological picture of the world as consisting of epistemologically accessible sense-data, their properties and relations, should not be understood as a central aspect of his Logical Atomism, but just a temporary stage. Landini instead portrays Logical Atomism as involving first and foremost a commitment to the view that the only kind of necessity is logical necessity, along with a methodological commitment to logical reconstructions of those doctrines which tend to posit non-logical forms of necessity as a result of having an unduly simple understanding of the correct logical form of certain phenomena. Landini gives examples such as the concepts of *number*, *limit*, and *space* and *time*, which prior to analysis, might be taken to involve special metaphysical beings, but after analysis can be understood as logical constructions out of less dubious entities, with the necessities they involve revealed as purely formal (logical) consequences of their method of construction. Much of the chapter is devoted to Russell's theory of descriptions as a paradigm example of Russell's analytical methodology, where what might, pre-analytically, be taken as evidence for unreal entities can be instead reinterpreted as involving quantificational apparati instead. Landini concludes the chapter with an examination of ways in which the theory of descriptions can be used to solve certain puzzles concerning the logical form of modal propositions and propositional attitude ascriptions.

While I think Landini is right to stress the methodological and logical aspects of Russell's philosophy, I'm not sure he is right to identify this with Logical Atomism itself. Russell's Logical Atomism has a methodology, to be sure, but it is more than just that. The chapter does not at all address Russell's views on such things as simplicity, the priority of atomic propositions and facts, or the reality of relations, all of which I think Russell himself took to be central to what he called "Logical Atomism." In *My Philosophical Development* (chaps. I, V), Russell dates his endorsement of Logical Atomism to the break made by both himself and G. E. Moore from the idealist doctrines prevalent in Britain at the end of the 19th century, and in particular, to their rejection of "the doctrine of internal relations." It is hard to reconcile this, Russell's own, characterization of Logical Atomism with Landini's portrayal. Indeed, Landini even fails to mention certain important aspects of the traditional interpretation of Logical Atomism which do obviously intersect with his own account of it as eschewing non-logical necessities. For example, Logical Atomism is often taken to entail that all atomic propositions are independent from each other. One would expect that Russell would have enthusiastically endorsed this principle if Landini were right that the key doctrine is that all necessity is logical. *Logic* certainly doesn't allow one to deduce the truth or falsity of any atomic proposition from that of another. Yet, Russell's own remarks on the issue were hedged; he claimed, e.g., in *Our Knowledge of the External World* (p. 48) that "[p]erhaps one atomic fact may sometimes be capable of being inferred from another, though I do not believe this to be the case." Perhaps Russell's diffidence can be made consistent with Landini's reading, but as he doesn't broach the issue, it is hard to see how.

Some of the missing features of Landini's discussion of Russell's Logical Atomism are made up for in the next two chapters, entitled "Scientific Epistemology" and "Mind and Matter." The first chapter begins with an argument to the effect that Russell repudiated methodological solipsism as a starting place in epistemology in favor of a method that gave pride of place to the actual results of the science of the day. Landini argues that Russell's temporary endorsement in the mid-1910s of a view according to which empirical statements should be analyzed in terms of sense-data, their properties and relations, must not be understood as part of a foundationalist research program in epistemology, but rather as a consequence of Russell's unique interpretation of the best way to accommodate Arthur Eddington's interpretation of Einstein's general

theory of relativity. Landini also again argues that Russell's commitment to sense-data should not be taken as definitive of Logical Atomism, and notes that the latter survived Russell's abandonment of sense-data as part of his conversion to neutral monism. Russell's 1913 abandoned work, *The Theory of Knowledge*, also looms large in the chapter, and Landini argues that the cornerstone multiple relations theory of judgment it contains was undermined equally by criticisms made by Wittgenstein as well as Russell's increasing attraction to neutral monism. Regarding Russell's theory of representation and truth, Landini argues that Russell held at the time of *PM* that all facts are atomic and independent, and that, even when Russell later included general and negative facts into his metaphysics, as in the 1918 *Philosophy of Logical Atomism* lectures, they were not to be understood as the truth-makers for general propositions. Landini seems to think this is required in order for the theory of truth there to be consistent with the recursive formal semantics intended for *PM*, but as Landini offers little by way of further explanation, and no textual evidence, it is difficult to assess this point. The subsequent chapter addresses Russell's understanding of subjective qualities as emerging from the series of classes of momentary events making up one's brain, Russell's account of introspection, his structural realism, and goes into further detail concerning Russell's views on representation, belief and truth.

Much as the third chapter represented a summary of one of Landini's previous books, the seventh chapter, entitled "*Principia*'s Second Edition" represents a summary of another, his *Wittgenstein's Apprenticeship with Russell* (Cambridge 2007). The connection to Wittgenstein lies in Landini's interpretation that the second edition of *PM* involves an exploration—*without* any kind of endorsement—of Wittgenstein's ideas. Landini understands the early Wittgenstein as sharing a common philosophical pursuit with Russell, and indeed, as taking Russell's method a step further. Wittgenstein understood the Russellian precept that all necessity is logical necessity as requiring doing away with the formal concepts of "universal," "particular," "complex," "fact," etc., in favor of structured variables which *show* the formal nature of their values without this needing to be expressed by a proposition. Landini sees this as the genesis of Wittgenstein's saying/showing distinction. Landini holds that much of the project of Wittgenstein's early work stemmed from the conviction that logic must be *decidable*. In an adequate notation all logical truths would be represented the same way, and hence translating into this idiom would provide a means for determining whether any proposition was logically valid. Landini sees Wittgenstein's exploration of the N-operator and ab-notation of the *Tractatus* as part of this endeavor. However, Landini notes that this project was doomed to failure in light of Church's later result that quantificational logic is undecidable.

Landini reads the second edition of *PM* as exploring in particular the Wittgensteinian conception of logical truths as generalized tautologies, whereupon the Axiom of Reducibility fails as a logical truth. In the introduction and appendices to the edition, Russell explores whether or not the need for the Reducibility axiom might be circumvented by adopting in its place a more stringent principle of extensionality, and proffers a positive result that mathematical induction at least can be obtained without Reducibility. The proof Russell offers for this was later discovered by Gödel to contain a flaw, but Landini boldly claims that the defect can be fixed, citing previous work. (It should be noted that Landini's claim that the defect is fixable has been questioned by Allen Hazen and others.) Landini ends the chapter with a discussion of Frank Ramsey's rather different reaction to Wittgenstein's work and the influence Ramsey's work had on Russell.

The penultimate chapter, "Probable Knowledge" deals primarily with Russell's 1948 work *Human Knowledge: Its Scope and Limits*. Landini argues that by this time, Russell had adopted a fairly thorough-going empiricism and naturalism, even thinking that a naturalistic understanding of logic is possible. However, in *Human Knowledge*, Russell did admit certain limits to absolute natu-

ralism, mainly owing to the problem of induction. Russell denied that inductive arguments themselves or the mathematical theory of probability could provide justification for induction, and argued instead that we rely on five indemonstrable principles—the postulates of quasi-permanence, separable causal lines, spatial-temporal continuity in causal-lines, structure, and analogy—when we engage in scientific theorizing. The chapter ends with a discussion of Russell's views on causality, suggesting that the closest thing to a "law of causality" in Russell's theorizing is a principle to the effect that changes in the state of the universe can be expressed in a functional way.

In the final chapter, "Icarus," Landini sketches the development of Russell's views on ethics, and its relationship to religion and mysticism. Russell began his philosophical career, like G. E. Moore, with the conviction that we are somehow able to intuit the objective property of goodness. He then moves later in his career to a Spinozistic conception of morality whereupon the good life consists in the contemplation of the world *sub specie aeternitatis*. Russell finally settles for a consequentialist account of morality according to which reason is advocated to be invoked as a means for determining how best to balance the fulfillment of the conflicting desires and needs of many conscious beings. Figuring in the chapter is also a discussion of Russell's "Liberal Decalogue," (from his *Autobiography*, vol. 3, pp. 71–72) a teacher's version of the 10 commandments, which is worth quoting in full:

1. Do not feel absolutely certain of anything.

2. Do not think it worth while to proceed by concealing evidence, for the evidence is sure to come to light.

3. Never try to discourage thinking for you are sure to succeed.

4. When you meet with opposition, even if it should be from your husband or your children, endeavour to overcome it by argument and not by authority, for a victory dependent upon authority is unreal and illusory.

5. Have no respect for the authority of others, for there are always contrary authorities to be found.

6. Do not use power to suppress opinions you think pernicious, for if you do the opinions will suppress you.

7. Do not fear to be eccentric in opinion, for every opinion now accepted was once eccentric.

8. Find more pleasure in intelligent dissent than in passive agreement, for, if you value intelligence as you should, the former implies a deeper agreement than the latter.

9. Be scrupulously truthful, even if the truth is inconvenient, for it is more inconvenient when you try to conceal it.

10. Do not feel envious of the happiness of those who live in a fool's paradise, for only a fool will think that it is happiness.

I am particularly impressed by Landini's ensuing discussion of the worth of ethical commandments, be they from Russell or (allegedly) from God. Landini argues that no commandment should be followed merely because it is a commandment. Even if we are convinced that there exists a God who is an infallible witness to ethical truth, we cannot be sure that a commandment actually is a commandment from God without having independent means of verifying its ethical worth. Without this, it is just as rational to doubt the credibility of the source. Landini goes on to write:

> Indeed, there is a curious test God can give us to see whether we are ethical. He merely needs to command us to do something. If we do it merely because we believe He commands it, we fail the test.

This is, I think, a fascinating spin on the *Euthyphro* problem.

Finally, the volume also contains both recommended readings lists at the end of each chapter as well as a lengthy research bibliography, an index, a glossary, and interestingly enough, a timeline of Russell's views on philosophical logic from 1903 through the 1910s.

This book is not a perfect introduction to Russell's philosophy. At times (most notably, in chapter 3) it might not be fully accessible to a beginning reader. At other times, it makes bold revisionary claims about how to understand Russell's philosophy, and even when the reading given is plausible, not enough textual evidence is given to support the reading. Nevertheless, all in all, it is a terrific book, and I know of no better introduction to Russell's philosophy as a whole. Given Russell's immensely prolific output and the extremely wide range of philosophical interests he pursued, to have provided a coherent summary such as this is a tremendous accomplishment. This book will be an essential read for both scholars and students of Russell's philosophy for years to come.

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