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Russell's theory of types, 1901–1910: its complex origins in the unpublished manuscripts.

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This profound and interesting essay attempts to show "the philosophical continuity of Russell's ideas from his paradox {of the class of all classes which are not members of themselves} to *Principia mathematica*" (p. 131). In particular, the author focusses his discussion on the development of the theory of types. This theory first appeared in Russell's *The principles of mathematics* [Cambridge Univ. Press, Cambridge, 1903] as a primitive attempt to resolve the paradoxes (Russell's and Cantor's). But, as Russell says, "it appears that the special contradiction of Chapter X is solved by the doctrine of types, but there is at least one closely analogous contradiction which is probably not soluble by this doctrine" [Russell, op. cit., see p. 529; second edition, Allen & Unwin, London, 1937].

Apparently, Russell abandoned this unsatisfactory answer and attempted to find other possible ways to resolve the paradoxes. In fact, in the same book, Russell very briefly sketched other possible ways to escape the paradoxes. But, in 1908, Russell presented a second and final version of his theory of types [Amer. J. Math. **30** (1908), 222–262; Jbuch **39**, 85].

This is the solution contained in Russell and A. N. Whitehead's *Principia mathematica* [*Vol. I*, Cambridge Univ. Press, Cambridge, 1910; Jbuch **41**, 83]. The main goal of *Principia mathematica* was to unfold (mathematically speaking) the logicist thesis (i.e., the idea that a set of primitive notions and propositions was capable of proportionating an account of all mathematics, avoiding the paradoxes). But, knowing that Russell thought this answer to be unsatisfactory and that he attempted to find other solutions, can we find a link or continuity in his thought from 1903 to 1910?

In order to show this continuity (from 1901, when Russell wrote the manuscript version of Parts I and II of *The principles of mathematics*), the author clarifies, first (among many other issues), the role of the paradoxes as the key element in the explanation of the apparent inconsistency: "on one hand {Russell} tries to reduce all to logical terms; on the other hand he grants the same kind of being for mathematical objects" (p. 133). Second, the author regards the substitutional theory and the theory of types as two forms of the no-classes theory.

This deep and fascinating philosophical analysis is based on Russell's published and unpublished articles, as well as the most recent articles and accounts on the history and philosophy of mathematics of this particular period.

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