

Book Review

Review of “The Significance of the New Logic” Willard Van Orman Quine. Edited and Translated by Walter Carnielli, Frederique Janssen-Lauret, and William Pickering. Cambridge University Press, Cambridge, UK, 2018, pp. 1–200. ISBN-10: 1107179025 ISBN-13: 978-1107179028

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Received: 30 April 2019; Accepted: 17 May 2019; Published: 22 May 2019



Abstract: In this review, I will discuss the historical importance of “The Significance of the New Logic” by Quine. This is a translation of the original “O Sentido da Nova Lógica” in Portuguese by Carnielli, Janssen-Lauret, and Pickering. The American philosopher wrote this book in the beginning of the 1940s, before a major shift in his philosophy. Thus, I will argue that the reader must see this book as an introduction to an important period in his thinking. I will provide a brief summary of the chapters, remarking on valuable features in each of them and positions Quine abandoned in his later work.

Keywords: quine; logic; ontology

The book “Significance of the New Logic” (SNL) [1] is a translation of Quine’s “O Sentido da Nova Lógica” [2]. He published the original in Portuguese as the result of a period of time spent visiting the Free School of Sociology and Politics, by that time connected to the University of São Paulo. The publication represents a stage in which the American philosopher was on the verge of a philosophical turn. Not long after this period, Quine published the important papers “Notes on Existence and Necessity”, “On What There is” and “Two Dogmas of Empiricism”. Most of Quine’s writings were in English. Thus, it has not been difficult for scholars to have access in full to most originals. However, in the 1940s, which was a period of maturation in Quine’s philosophy, he has been writing in Portuguese, and this translation fills a historical gap Quine scholars were hoping for.

Carnielli, Janssen-Lauret and Pickering explore in many details the context in which Quine wrote this book. They are successful in presenting the Brazilian philosophical background, especially as regards their relative absence in the analytical scenario. In this respect, the book intended to further introduce the Brazilians to analytic philosophy. Discussions and techniques developed by Frege, Russell, Carnap, Tarski, Gödel and others are therefore the primary topics in the volume.

We note that Quine intended SNL to be a textbook. As such, the volume fails to give an updated overview of techniques and it uses outdated language. However, SNL can now be regarded as a picture of Quine’s view on logic in the early 1940s. It is wrong to regard the book only as a textbook. The way Quine develops the logical apparatus and his preparatory remarks are the result of a very distinct philosophical position. By a close examination of his writing, we realize he was arguing for an extensional, nominalistic leaning ontology and a rather reluctant logicist position.

The latter part of the book is dedicated to a discussion on themes such as ontology and its relation with philosophy of language and logic. He drafts in Portuguese the first version of his later work: “Notes on Existence and Necessity”. Thus, he exits the scope of a pure textbook, including

contemporary discussions on ontology and philosophy of mathematics. These topics are accompanied by the flavour of the inner conflict that suggests parts of Quine's mature philosophy.

Quine divides the book into an introduction and four parts: (1) Theory of composition, (2) Theory of quantification, (3) Identity and Existence, (4) Class, Relation and Number.

The introduction in Quine's SNL starts with a brief analysis of the new logic as opposed with Aristotelian logic. He attributes this new development to two main reasons: Cantor's set theory and Russell's paradox discovery. New developments on infinite quantities by Cantor urged mathematicians to develop reliable tools, since even good mathematical intuition could lead to error as they handle infinite sets. As Quine argues, "We must explore the ocean that Cantor discovered by navigating blindly". We thus need a precise and truth preserving tool. Russell's paradox leads to an even stronger need for further scrutiny on logical development once the proof of the paradox relies on a tacitly accepted principle. Still in this introduction, Quine expresses a logicist belief, not a position he holds in the mature phase of his work. He knew Gödel's incompleteness results and the impact it should have on the theory of classes being part of logic. However, he was confident that the virtual theory of classes avoids ontological commitments in many mathematical theories. It is interesting to find Quine defending with confidence that mathematics is reducible to logic. But even more surprising is to see his reluctance with the definition of logic. Though not conventionalist, his characterization of logic still relies on concepts as truth and the "essential occurrence" of logical terms.

In the first part, Quine exposes the theory of composition. He explores distinctions between statements and sentences that are not statements. He rejects non-declarative statements and sentences that are dependent indexical terms from logical analysis. Another notable feature of his exposition is the fact that he insists on a simple logical vocabulary with only " \sim " for negation and "." for conjunction. I may attribute this, as Janssen-Lauret says in the introduction, to the influence of the *Principia* or by his parsimonious tendencies. Notwithstanding, Quine does not explore reasons for this preference.

Quine develops quantification theory in the second part of the book. He emphasises the problems of quantification in its relation to natural language. Thus, he introduces each quantificational term by first evoking misconceptions about words such as "All," "Some," and "Everything." Quine's concerns with ontology are manifest when he discusses logical pronouns, as he hints at his ontological conceptions later developed in "On What There is." A drawback of Quine's discussion is the absence of a proof-system, as logicians now do by defining the turnstile " \vdash ." He bases his conclusions on the truth table method and axioms introduced to quantifiers. There is an interesting section, called the Practical Aspect, in which he defends quantificational logic to insurance companies. This usage is not standard for the period. Now, logic modeling of this kind of problem is routine in computer science and engineering.

The relation between philosophical issues and logic is the main concern in the later parts of the book. The third part of the book focuses on problems about identity. It is in this part we find the original draft of the paper "Notes on Existence and necessity." I found it interesting to contrast this version with the one published in *The Journal of Philosophy*. The translators provided many clarifying notes on the main differences between the two versions. They had shown that, in some points, the undecided Quine in SNL became convinced of some positions by the time of the paper.

The last part of the book focuses on the theory of classes. Quine describes a theory of classes (now referred to as single-sorted NBG) instead of the now more standard choice for set theories. This choice may be for a weak hope that a virtual theory of classes would avoid ontological commitments. In opposition, a set theory would from the start be committed to abstract entities. He later dismisses this hope. But here we can understand the hesitant logicist influence on the American author. At this point in Quine's career, he was still adherent to logicist ideas as he held some positivist tendencies. Nonetheless, he argues for a fundamental difference between classes and aggregates, emphasising how the latter cannot account for what we may express with the former. This represents a profound downside to logicism and positivism. As Quine argues, "the theory of classes, in contrast with logic in the strict sense, implies an ontology." Particularly important, this contradicts his own statements

in the introduction, where he declares himself committed to logicism and to a form of nominalism. He thus retreats from reducing mathematical theories to logic, restricting the scope to the reduction of the mathematical language. In this balance, he sets forth a tentative argument of indispensability. He later develops a virtual theory of classes, which gives hope for eliminating ontological commitment in the theory of classes. But he adds: “Arithmetic depends on the real theory of classes, with all of its ontological presuppositions.”

This translation is of major importance for any Quine scholar. Apart from the good quality of the translation, the book is full of clarifying remarks. The introductory paper by Janssen-Lauret gives a valuable general picture of this specific time of Quine’s thinking. Moreover, reviving the picture of now established ideas may be a good source for finding new angles to reframe old questions. Philosophers of logic, logicians, naturalist philosophers, and people interested in the history of ideas may find great insight in the ideas expressed in the book.

Funding: This research received funding from FAPESP, process number 2016/10497-8.

Conflicts of Interest: The author declares no conflict of interest.

References

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