recursion theory, proof theory, constructive mathematics, non-classical logics, and applications of logic) are still in the planning stages. for succedding volumes. The over-all project was announced and described in *History and Philosophy of Logic* **8** (1987), 71–76 and *Historia Mathematica* **14** (1987), 285–287. (As far as I am aware, the only general history of logic in Russia from the tenth to late nineteenth centuries in any western language is my "Theology Against Logic: The Origins of Logic in Old Russia," *History and Philosophy of Logic* **13** (1992), 15–42, which emphasizes the period of the pre-Petrine to Catherinian eras from the late fifteenth to mid-eighteenth centuries, and especially the Petrine era from the late seventeenth to early eighteenth centuries; my related paper, on "Logic in Russia's Western Lands, Sixteenth – Eighteenth Centuries,"meanwhile remains unfinished.)

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Luciano Pennino, *La logica simbolica nella produzione scientifica in lingua russa (1961 – 1983)*, Aleph: Collona di Logica Universale E Filosofia **4**, Roma/Napoli, LER, 1990.

Reviewed by

IRVING H. ANELLIS

The title of this book promises much more than is actually produced. The reader who, even in a casual way, took note of the writings of Soviet logicans will not be surprised by this. After all, if Yanovskaya was able to produce over a hundred pages to survey the work of her colleagues over the decade 1947 – 1957, one might easily anticipate that more than ninety-eight pages would be required to survey the logical research of of Soviet logicians writing in Russian over the twenty-three year period 1961 – 1983, in particular when this was one of the most prolific and profound periods for Soviet work in logic. A closer look reveals that there are barely eight-six pages of text in Pennino's book, provided one includes the bibliography in the count. The amount of textual content is further reduced by the oversized (13 point) type, which appears ever larger because of the unusual style chosen (***boldface italic***).

Apart from the unusual style of tyography, there are other typesetting features marring the presentation: logical symbols and Greek letters are written in by hand, and so are superscripts and subscripts, even when requiring only letters from the Roman alphabet or a

mixture of letters and numerals; in other cases, formulæ were clearly produced on a type-writer and pasted into the text; in a few cases, text was corrected by hand, and in a small number of cases text spills over into the margin. The overall effect is one of an extremely amateurish typesetting job. The copyediting was equally inconsistent and careless. Thus, G.E. Mints' name (which Mints himself now prefers to spell "Minc") is misspelled "Minac" on p. 94, Schönfinkel's name is misspelled as "Shönfinkel" on p. 93, and we find "I.S. Narskij" on p. 95 but "I.S. Narsky" on p. 97. The treatment of bibliographic references is equally inconsistent, with page numbers missing from the references in chapter 1, but not in chapter 2. "existence" is misspelled "excistence" on p. 44 in the title of a paper by Harrop, and the use of diacritical marks in the transliteration of Russian is inconsistent.

Having commented on the formatting and typography of Pennino's book, let us state why the title promises so much more than is delivered.

The title promises a discussion of Russian-language scientific work in symbolic logic for the period 1961 – 1983. In fact, what we have are two chapters on non-classical logics, and an extremely short bibliographical guide to modal and intensional logic (pp. 93–94), relevance and paraconsistent logic (pp. 94–95), and syllogistic logic (p. 95–96), along with the accompanying 16-item bibliography itself (pp. 96–98). The first chapter is devoted to the Kishinev School, and is concerned with work in superintuitionistic logic and minimal logic. The first section is concerned exclusively with A.V. Kuznetsov's work on the exposition of the tools for establishing unprovability or undecidability. The second section is concerned exclusively with I.S. Negru's work on implicative calculi with monadic propositional variables. The second chapter is devoted to what the author calls "non-standard" logic, by which he means "nonclassical" logics. In the first section, he is concerned exclusively with various valid extensions of systems of relevance logic propounded by E.A. Sidorenko. Section two is given over exclusively to quantum logic, and specifically to Yu.M. Lomsadze's axiomatic presentation of quantum theory. The third section of this chapter is devoted to cybernetics, and in particular to its conceptual apparatus and axiomatic structure, examining some of the work of Aksel Berg, E.F. Mur, A.Ya. Moroz, I.I. Smal'gauzen, and S.B. Krinskij. In short, the title promises — or at the very least seems to promise — a survey of Russian-language research in symbolic logic for the period 1961 – 1983, but we get instead a survey of the work of four particular researchers, two in systems related to intuitionistic logic and two in nonclassical logics, along with a survey of some of the work on applications of logic to cybernetics. Rather than being a survey of Russian-language research in symbolic logic, a survey of Russian-language research on nonclassical logics, or even a survey of Russian-language research in applications of nonclassical logics to cybernetics, this is really a survey of the work of a four logicians and five cyberneticists, and there is, most regretably, nothing in the title to indicate this constriction.