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REVIEWS

The Association for Symbolic Logic publishes analytical reviews of selected books and articles in the field of symbolic logic. The reviews were published in ***The Journal of Symbolic Logic*** from the founding of the JOURNAL in 1936 until the end of 1999. The Association moved the reviews to this BULLETIN, beginning in 2000.

The Reviews Section is edited by Alasdair Urquhart (Managing Editor), Steve Awodey, John Baldwin, Lev Beklemishev, Anuj Dawar, Mirna Džamonja, David Evans, Erich Grädel, Denis Hirschfeldt, Hannes Leitgeb, Roger Maddux, Grigori Mints, and Volker Peckhaus. Authors and publishers are requested to send, for review, copies of books to *ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604, USA.*

In a review, a reference "JSL XLIII 148," for example, refers either to the publication reviewed on page 148 of volume 43 of the JOURNAL, or to the review itself (which contains full bibliographical information for the reviewed publication). Analogously, a reference "BSL VII 376" refers to the review beginning on page 376 in volume 7 of this BULLETIN, or to the publication there reviewed. "JSL LV 347" refers to one of the reviews or one of the publications reviewed or listed on page 347 of volume 55 of the JOURNAL, with reliance on the context to show which one is meant. The reference "JSL LIII 318(3)" is to the third item on page 318 of volume 53 of the JOURNAL, that is, to van Heijenoort's *Frege and vagueness*, and "JSL LX 684(8)" refers to the eighth item on page 684 of volume 60 of the JOURNAL, that is, to Tarski's *Truth and proof*.

References such as 49***5*** or 280***I*** are to entries so numbered in *A bibliography of symbolic logic* (the JOURNAL, vol. 1, pp. 121–218).

TORKEL FRANZÉN. ***Inexhaustibility: a non-exhaustive treatment.*** Lecture Notes in Logic, vol. 16. Association for Symbolic Logic, A K Peters, Ltd., Wellesley, Massachusetts, 2004, xi + 251 pp.

TORKEL FRANZÉN.. *Transfinite progressions: a second look at completeness*. ***The Bulletin of Symbolic Logic***, vol. 10, no. 3 (2004), pp. 367–389.

Both the book and the paper concern a phenomenon that Torkel Franzén calls *inexhaustibility of mathematical knowledge*. He describes it as a certain positive aspect of Gödel's incompleteness theorems (***Inexhaustibility***, p. 10): "we have a way of extending any system of axioms for mathematics that we recognize as correct to a logically stronger system that we will also recognize as correct, namely by adding the statement that the old system is consistent. ... Thus, our mathematical knowledge would appear to be inexhaustible in the sense that it cannot be pinned down in any one formal axiomatic theory."

If one takes the concept of (mathematical) knowledge seriously, many aspects of the inexhaustibility phenomenon appear rather puzzling. For example, one can ponder what is it specifically that makes our knowledge inexhaustible, why is it impossible to pin down exactly which axioms we recognize as correct? On the other hand, one can ask what would happen if one simply adds a consistency assertion as a new axiom to a given system and repeats this process ad infinitum. Would the limits of our knowledge be reached by such a process? In the book under review, the author explores many of such questions and scrutinizes the various concepts and ideas involved. Thus, it is a book on epistemological and foundational *interpretations* of mathematical results around Gödel's incompleteness theorems, rather than simply an exposition of these results.

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