

justify the concept of choice sequence, the concept of radical human freedom is invoked (p. 126). These concepts can hardly be regarded as philosophically neutral or even unmetaphysical, and the author is aware of this. The author does not indicate, however, that the first part of Heyting's assertion is also debatable. This is due to the fact that, in the reviewer's opinion, the author is insufficiently sensitive to the pluriformity of the (classical) opposition. He is too exclusively focused on the prototypical Cantorian set theorist as the defender of classical mathematics. This is witnessed, for example, in the following passage: "The upshot . . . is that so long as the classical mathematician abstains from invoking Platonist assumption[s], he has no convincing arguments against the intuitionist's challenge to bivalence and to some forms of reasoning of classical mathematics" (p. 122). From the context in which this quotation appears, it is clear that the Platonist assumptions that the author has in mind here include not only the subject-independent existence of mathematical objects, but also the existence of actually infinite, even non-denumerable sets such as the Platonist continuum (p. 122). But it is not clear that a defender of classical mathematics must subscribe to these strong metaphysical claims. For example, there is the predicativist program which goes back at least to (the pre-intuitionist) Hermann Weyl and which is in our days vigorously pursued by Feferman, Friedman, and Simpson, among others. It has been very successful in proof-theoretically reducing much of classical mainstream mathematics to a classical arithmetical basis. This arithmetical basis can be interpreted as asserting merely the existence of the natural numbers as a potentially infinite collection, which can in turn be taken, if one so desires and is speculatively inclined, to be generated by exactly the process of two-ity from which all mathematical objects are constructed according to Brouwer. Now Brouwer and Heyting could still appeal to the argument based on unresolved mathematical problems to protest that classical arithmetic cannot be interpreted as being about the natural numbers conceived as a *potential* infinity. But such a move would accord ill with a main thesis of the book under review that was alluded to earlier, i.e., that the argument based on choice sequences rather than the argument based on unresolved problems is decisive in the question of the validity of the law of bivalence.

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GRIGORI MINTS. *A short introduction to intuitionistic logic*. The university series in mathematics. Kluwer Academic/Plenum Publishers, New York etc. 2000, ix + 131 pp.

The book successfully aims at being short, but still contains some pearls of the subject. It leads up to rather interesting results, including, for example, a proof of (a special case of) the coherence theorem. Part of the reason why the author managed to keep the text short is that he has given new or at least modified proofs of several well-known theorems. To achieve all this, the author was able to make use of decades of experience as a leading researcher in intuitionistic logic and proof theory. The emphasis of the text, and also the criterion on what to select, are possible applications in computer science.

To make the material more accessible, the basic techniques are presented for propositional logic first; extensions and modifications necessary to cover also predicate logic are treated in a (rather short) second part of the book.

Unfortunately, the usefulness of the book is somewhat hampered by the fact that almost all cross-references are only approximately right; somehow there must have been a problem with the automated referencing of the text processing system. Another minus is that the author only very occasionally gives historical notes. Generally the reader is referred to other texts for such information. A particularly unfortunate misprint is the omission of the cut formula in the left premiss of the cut rule on page 55.

After an extremely short (one-page) Chapter 1 consisting of notational conventions, Chapter 2 presents Gentzen's natural deduction system NJp for intuitionistic propositional logic.