

Gaisi Takeuti,

“Incompleteness Theorem and Its Frontier”, in Matthias Bazz, Sy-David Friedman, & Jan Krajíček (editors), *Logic Colloquium 2001. Proceedings of the Annual European Summer Meeting of the Association for Symbolic Logic, held at Vienna, Austria, August 1-6, 2001* Wellesley, MA: A K Peters/Association for Symbolic Logic, 2001, pp. 434–439.

## REVIEW

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In this article, Takeuti, himself a major figure in the history of proof theory, a friend of Gödel’s, and already a contributor to our understanding of Gödel’s work (see [Takeuti 1982; 2003]<sup>1</sup>), begins by declaring that Gödel’s “seemingly simple theorem” of [Gödel 1931] “changed our view of mathematics completely” (p. 434).

Now if we should read John Dawson’s [1985; 1991] article on the impact which Gödel’s incompleteness results had on his fellow mathematicians at the time, we should find ourselves initially perplexed by Takeuti’s assertion (p. 434) that “[t]his revolutionary theorem changed the way mathematicians think of mathematics drastically.” Dawson [1991, 84], to the contrary, reminds us that each Jean van Heijenoort [1967, 594], Georg Kreisel [1979, 13], and Stephen Kleene [1976, 767], among others close to Gödel, argued that Gödel’s incompleteness theorems neither surprised mathematicians nor changed the way they worked. Indeed, so convincing was the proof of the second theorem in [Gödel 1931] that Gödel deemed unnecessary the anticipated second part of the article in which a more detailed proof would be set forth. Moreover, Gödel had already announced his results at the Second Conference on Epistemology of the Exact Sciences held in Königsberg in early September 1930. Certainly Gödel’s Viennese colleagues, among them Carnap, had known of the results prior to the conference ([Dawson 1992, 85-86]; see also [Dawson 1984]). He even

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<sup>1</sup>See also, *e.g.* [Takeuti 2000] for a technical discussion of the role and relevance of Gödel sentences in proof theory, in particular as applied to bounded arithmetic.