

A NOTE CONCERNING IRVING H. ANELLIS "DISTORTIONS AND DISCONTINUITIES OF MATHEMATICAL PROGRESS: A MATTER OF STYLE, A MATTER OF LUCK, A MATTER OF TIME, ... A MATTER OF FACT"

Paul Ernest

This note aims at correcting some of the claims made by Irving Anellis in 'Distortions and Discontinuities of Mathematical Progress', in *Philosophica* 43 (1989), 163-196. In his section, 'A Matter of Luck' Anellis offers an account of the development of the 'tree' or 'tableau' method in proof theory. He describes van Heijenoort's contribution as follows.

"In [1973], he showed that the method is sound and complete for propositional calculus; in [1974] he proved the soundness and completeness of the method for first order functional logic; and in [1975] and [1975a], he showed the method to be sound and complete for intuitionistic logic. None of these results were published."

...

"Moreover, because of this unlucky hesitancy, Bell and Machover [1977] published their proof of the soundness and completeness of the falsifiability tree method for classical propositional calculus and classical first order logic before van Heijenoort published his, although *van Heijenoort's proofs of 1973 and 1974 were finished first* and are simpler, if also somewhat longer, and van Heijenoort received no credit for his work." (pages 179-180, emphasis added)

First of all, there is the matter of the facts. As a postgraduate mathematics student in London in 1973-4 (M.Sc. degree awarded Summer 1974) I attended Moshé Machover's courses on Mathematical Logic (October 1973 - March 1974) and Intuitionistic Logic (January - March 1974) at Chelsea College. In each course I and the other students were given

typescript chapters of Bell and Machover [1977] as study materials (later to be published as chapters 1, 2, 3, 7 and 9). Apart from a few typing errors, which I and fellow students helped to correct, the contents were as published. Therefore the priority claim in the above quotation is incorrect. It is based on Anellis' mistaken identification of the date of writing of Bell and Machover [1977] with its date of publication. I had copies of most of these chapters in my hand before the end of 1973, and copies of all of them, before the end of March 1974. They were presumably written over the preceding years, reaching their final form before or at about the time I received them. (The same is true of all of the other chapters too. The MS was ready in 1974, but there were delays in printing in Hungary, although the publishers were North Holland in Amsterdam.)

Secondly, John Bell and Moshé Machover were justifiably pleased with their text, not because it presented novel results, but because it was an excellent systematization and presentation of more or less standard material, in a pedagogically effective manner. In particular, the classical tableau method was offered as based on Smullyan's version of 1968, and the intuitionistic version as based on Fitting's work of 1969 (as the historical remarks following chapters 1 and 9 state). Therefore, for Anellis to write of van Heijenoort's failure to gain credit for relatively routine unpublished material which he was not the first to develop (i.e. the soundness and completeness results mentioned above) is a little far-fetched. By 1975 the elementary results in the field were widely accepted, as the introduction to Toledo [1975] shows (page 15), and research on Tableau Systems has already moved on to matters of more general concern in Proof Theory.

In conclusion, I would like to say that where factual claims are made, as in the above, I think it is important that we maintain the highest levels of scholarship, and refrain from unfounded claims. In a priority claim it is not appropriate to compare the date of writing of one document with the date of publication of another, which may have lain in press for several years (as in this case). However, in general, I believe that priority claims in the sciences are not only fruitless, but harmful. They perpetuate the negative values of competitive individualism. In fact, all knowledge grows by means of group processes and interactions, and to misquote Newton, when one scientist sees further than others it is because he stands on the shoulders of giants.

University of Exeter

REFERENCE

Toledo, Sue (1975): *Tableau Systems for First Order Number Theory and Certain Higher Order Theories* (Lecture Notes in Mathematics 447), Berlin, Heidelberg and New York: Springer Verlag.

BOOKS RECEIVED FOR REVIEW

- ALLEN, Colin & Michael HAND, *Logic Primer*, MIT, Mass., 1992.
- COLE, Stephen, *Making Science. Between Nature and Society*, Harvard UP, Harvard, 1992.
- CRIMMINS, Mark, *Talk About Beliefs*, MIT, Mass., 1992.
- DECLÈVE, Henri (Hommages et documents réunis par), *Profils de Jan Patocka*, Publications des Facultés Universitaires Saint-Louis, Bruxelles, 1992.
- DE WILDE, Rein, *Discipline en legende. De identiteit van de sociologie in Duitsland en de Verenigde Staten 1870-1930*, Van Gennep, Amsterdam, 1992.
- DIAMOND, Cora, *The Realistic Spirit. Wittgenstein, Philosophy, and the Mind*, MIT, Mass., 1991.
- DUMONT, Louis, *Essays on Individualism. Modern Ideology in Anthropological Perspective*, Univ. of Chicago Press, Chicago, 1992.
- EZQUERRO, Jesus & Jesus M. LARRAZABAL (eds.), *Cognition, Semantics and Philosophy*, Kluwer Academic Publishers, Dordrecht, 1992.
- GRIM, Patrick, *The Incomplete Universe. Totality, Knowledge, and Truth*, MIT, Mass., 1992.
- HEIJERMAN, Erik & Paul WOUTERS (red.), *Crisis van de Rede? Perspectieven op cultuur*, Van Gorcum, Assen, 1992.
- KOETSIER, Teun, *Lakatos' Philosophy of Mathematics. A Historical Approach*, North-Holland, Amsterdam, 1991.
- OLSSON, Gunnar, *Lines of Power - Limits of Language*, Univ. of Minnesota Press, Minneapolis, 1991.
- QUACKELBEEN, Julien, *Zeven avonden met Jacques Lacan*, Academia Press, Gent, 1991.
- RORTY, Richard M. (ed.), *The Linguistic Turn. Essays in Philosophical Method With Two Retrospective Essays*, Univ. of Chicago Press, Chicago, 1992.
- SEARLE, John R., *The Rediscovery of the Mind*, MIT, Mass., 1992.
- SLOBODKIN, Lawrence B., *Simplicity and Complexity in Games of the Intellect*, Harvard UP, Harvard, 1992.

- VAN DE VIJVER, Gert, *Van cybernetica naar connectionisme. Een epistemologische studie van doelgerichtheid*, Academia Press, Gent, 1991.
- WRIGHT, Will, *Wild Knowledge. Science, Language, and Social Life in a Fragile Environment*, Univ. of Minnesota Press, Minneapolis, 1992.