

My Collaboration with Bill Demopoulos : A Personal Reminiscence

John L. Bell

In the 90's Bill and I published a couple of joint papers.

In his contribution to my 2011 *Festschrift* "Vintage Enthusiasms"
Bill recalls:

I retain fond memories of both collaborations; they proceed quickly and almost effortlessly.

When I first read this I was touched, since I, too, retain fond memories of our collaborations. Their rapidity and effortlessness were, in retrospect, all the more remarkable given that both of us were men of strong opinions who might quickly have clashed. For his part Bill was not overawed by mathematicians (such as me) or indeed anybody else. I shall always recall his withering assessment of anyone who failed to impress him philosophically: *He doesn't have a philosophical bone in his body.* I hoped that he did not,

privately, hold that opinion of me. But I confess I was never certain. Be that as it may, our collaborations were pleasing to both of us and resulted in some satisfying joint publications:

(1) *Frege's Theory of Concepts and Objects and the Interpretation of Second-Order Logic*, Philosophia Mathematica, (3), 1, 1993.

(2) *Elementary Propositions and Independence*, Notre Dame J. of Formal Logic, 37, No.1, 1996.

Before coming to Western in 1989 I had not paid much attention to Frege but soon after my arrival Bill got me interested in Frege's work, in particular in "Frege's Theorem", the result implicit in the *Grundgesetze* that Hume's Principle implies the existence of a model of Peano's axioms for arithmetic.

Bill's shift of attention from the foundations of physics to Frege and the foundations of mathematics had begun some time before I showed up at Western, and it was his enthusiasm that initiated paper (1), in which we argued against Hintikka and Sandu's claim

that Frege lacked the concept of a function as an arbitrary correspondence, resulting in a restriction in his conception of second order logic. In our paper, we claimed that Frege's conception of a function in fact coincides with the set-theoretic notion of an arbitrary correspondence, in which case the range of Frege's function variables is in one-one correspondence with the power set of the domain of individuals. Our thought was that whatever covert role the neglect of Cantor's theorem might have played in the inconsistency of *Grundgesetze*, it was unlikely that Frege sought to ignore that theorem by assuming that the totality of functions, like the totality of expressions, is countably infinite.

The main body of the paper was chiefly due to Bill; my personal contribution to our joint effort was the Appendix on Frege's theorem in which Zermelo's well-ordering theorem is formulated and proved along "Fregean" lines within a certain system of many sorted first-order logic corresponding to Frege's domains of objects, relations, and first and second level concepts. This in turn is used to derive the existence of an infinite well-ordering and the natural number system.

A version of this Appendix *Frege's Theorem and the Zermelo-Bourbaki*

Lemma, later appeared in Bill's Harvard U.P. 1995 anthology *Frege's Philosophy of Mathematics*.

I recall Bill's ridicule of (he could be very scathing) the title of Hintikka and Sandu's paper *The skeleton in Frege's cupboard: the standard versus nonstandard distinction*. Bill scornfully dismissed the notion of a "skeleton" in Frege's cupboard and gleefully quoted the old nursery rhyme

Old Mother Hubbard, who went to the cupboard,
to get her poor dog a bone;
But when she got there
The cupboard was bare,
And so the poor dog had none.

Bill proposed that we use the lines

*But when she got there
The cupboard was bare,*

as an epigraph to the paper, and so it appears.

For the record, my later work on Frege is a consequence of Bill's stimulus:

Type-Reducing Correspondences and Well-Orderings: Frege's and Zermelo's Constructions Re-examined, Journal of Symbolic Logic, 60, No.1, 1995.

Fregean Extensions of First-Order Theories, Math. Logic Quarterly, 40, 1994. (Also reprinted in W. Demopoulos, ed., Frege's Philosophy of Mathematics, Harvard U.P., 1995).

Frege's Theorem in a Constructive Setting, Journal of Symbolic Logic, 64, no. 2, 1999.

Finite Sets and Frege Structures, Journal of Symbolic Logic, 64, no. 4, 1999.

The last couple of papers reflect my interest in intuitionistic logic and constructive reasoning, but despite my best efforts to engage Bill in this subject, he remained unmoved.

Paper (2) originated in the following way. I had been thinking about Wittgenstein's "elementary propositions" in the *Tractatus* and had the brainstorm that these could be seen as free independent generators of arbitrary propositions in the algebraic sense. (So I was bold enough to claim that Wittgenstein had implicitly introduced the concept of a free Boolean algebra.) I mentioned this to Bill, who quickly agreed and suggested that we collaborate on a paper analyzing various notions of independence arising in connection with elementary propositions in the philosophy of logical atomism.

The paper was quickly written -almost effortlessly, indeed. But getting it published was another matter. Bill had had much more experience than I in publishing philosophy papers (almost all of mine up to that point having been in mathematics), so he took on the responsibility of submitting our paper to a suitable philosophy journal. Bill first submitted it to *Mind* which quickly rejected it, giving the curious explanation that, although our paper may have had some merit, *Mind's* policy was to reject 9 papers out of 10, and ours was one of the 9. *Mind's* policy was, in short, to reject 9 papers out of 10 *before* submission. This struck me as being of an absurdity

comparable with the injunction on a top secret document to destroy it *before* reading. I tried to make light of the affair by quoting:

What is Mind?

No Matter.

What is Matter?

Never Mind.

Still, the rejection was irritating, especially to Bill who had had an excellent track record in getting his philosophy papers accepted for publication.

Bill next submitted the paper to *Nous*, whose then editor happened to be an acquaintance of his. After receipt of the paper had been acknowledged, months went by with no word from the journal's editor. Every time I ran into Bill I would ask if there had been any News from *Nous*, and on learning that there was none, remark "Is no news from *Nous* good news from *Nous*, or is it bad news from *Nous*?". Finally a letter from the editor arrived informing us that he had received two reports from the referees, one enthusiastically recommending publication and the other recommending rejection. The second referee's reasons for rejecting our paper did not seem very substantial, one of them being merely that we had failed to

refer to *his* work on Wittgenstein. On this slender basis the editor r concluded that he had “no choice” but to reject the paper. Bad news from *Nous* indeed! Bill became absolutely furious at this, calling the Editor “craven” and “pusillanimous” in bowing to the opinion of the second referee, who Bill was convinced was a hatchet-man of the all-powerful Wittgenstein industry whom the Editor did not wish to offend. He may well have been right.

The affair did have a happy ending, however. We decided finally to submit the paper to the *Notre Dame Journal of Formal Logic* where it was quickly accepted for publication.

Our collaboration was great fun, and I have not experienced the like since.