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Prof. William J. Rapaport Department of Computer Science SUNY Buffalo Buffalo, NY 14260

Dear Professor Rapaport,

This is in reply to your query for a Hilbert/Frege reference.

The original reference to Hilbert's remark that "One must be able to say at all times - instead of points, straight lines, and planes - tables, chairs, and beer mugs" is in Otto Blumenthal's biography of Hilbert, first published in *Natur-wissenschaften* 10 (1922), 65-104, and is reprinted in vol. III of Hilbert's *Gesamelte Abhandlungen* (Springer, 2nd ed., 1970), 388-429, where you will find the quote, cited as an off-the-cuff remark by Hilbert, on p. 403. It is repeated in C. Reid in her book *Hilbert-Courant* (Springer, 1986, p. 57), and by J. Fang in his book *Hilbert* (Paideia Press, 1970, p. 81).

Frege's responses to Hilbert's work on geometry (and on axiomatics generally), including selections from the Frege-Hilbert correspondence, is found in Frege (E.-H. W. Kluge, transl.), On the Foundations of Geometry and Formal Theories of Arithmetic (Yale U. Press, 1971). Selections from the Frege-Hilbert correspondence are also found in Frege, Philosophical and Mathematical Correspondence (U. Chicago Press, 1980).

There is a mountain of philosophical writing on the "Frege-Hilbert controversy"; an older but respected treatment is a paper by that title in the journal *Philosophy and Phenomenological Research* 34 (1973-74), 386-403 by Michael Resnik. The best recent treatment of Hilbert is Volker Peckhaus's book *Hilbertprogramme und Kritische Philosophie* (Göttingen, Vandenhoeck & Ruprecht, 1990). The bibliographies in Peckhaus's book and in Resnik's book *Frege and the Philosophy of Mathematics* (Cornell U. Press, 1980) should guide you well to additional sources.

I hope this may be of some use to you and go at least part of the way to answering your question.

Sincerely yours,

## Irving H. Anellis

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