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I read Frege in graduate school, of course. But I became seriously engaged only when I began teaching his work in the 1970s at UCLA. Each year that I gave the course, I spent three-quarters of the time on The Foundations of Arithmetic. On my own, I devoted many hours to formalizing his definitions, doing derivations with them, and making handouts for students. The Foundations of Arithmetic engendered enthusiasm, both in my attitude toward the teaching and in the students' response. Frege's powerful criticisms of alternative views made a deep intellectual impression, and his obvious struggles in developing his own positive positions on fundamental philosophical issues were inspiring. Frege's philosophy of mathematics was the center of the course. His papers in the philosophy of language came last, occupying only a quarter of the time and providing "glimpses beyond". I centered on the philosophy of mathematics because I thought it had to be understood, because UCLA's quarter system made courses relatively short, and because Frege's philosophy of language was taught in other courses. An unforeseen by-product of this approach was that it helped me see how Frege's epistemology—his attempt to understand the nature of mathematical knowledge—lies at the philosophical heart of all his work, including his philosophy of language.

From the beginning, I found Frege's epistemology and his association of language with thought attractive. I was attracted to his rationalism. I found his concentration on thought and knowledge as expressed in language a welcome alternative to relatively narrow reflection on linguistic structures, which had been my starting point in philosophy. My developing philosophical commitments in the theory of reference and philosophy of mind made me sensitive to central points that Frege neglected or made mistakes on. But I thought that many of his positions were right and profound. I knew that there was much to be gained from reflecting on his views on language, thought, and knowledge. The first two papers that I published on Frege (both in 1979) tried to work within Frege's point of view as much as possible. Yet neither paper employed as strict a historical methodology as I later came to believe was necessary for the most effective understanding and presentation of Frege's views.

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At the time, I regarded both of these papers as "holiday" work—work to be done with the left hand, so to speak, as a diversion from my main work in philosophy. I valued thinking along with Frege as I would value going through a mathematical proof or a physical workout. It seemed to be worthwhile in making one clearer-headed and stronger. And it was fun. In those first years, I did not see it as *directly* enhancing my own systematic work in philosophy.

I had had some training in history when I was in college. In coming up against ways in which Frege was philosophically foreign, I came to recognize that Frege should be studied as a figure in the history of philosophy. With the paper "Frege on Extensions of Concepts: 1884–1903" (1984), I tried to apply historical methodology in a more rigorous way.

While I was writing this paper, an event occurred that marked what I think of as a more substantial change in my approach to the study of Frege and to the history of philosophy. In one of the last revisions of the paper, before submitting it for publication, I came suddenly to see that Frege's rationalism guided his conception of sense in a much deeper way than I, or perhaps anyone, had appreciated before. I came to recognize how profoundly different Frege's conception of sense is from modern conceptions of communal linguistic meaning. The differences between modern views and Frege's views about demonstratives and proper names—which I and others had previously recognized—came to seem only the tip of a very large, strange, and wonderful iceberg. Some of these differences are discussed in the last sections of that 1984 paper, in "Frege on Sense and Linguistic Meaning" (1986), implicitly in "Intellectual Norms and Foundations of Mind" (1986),¹ and in subsequent papers on Frege. What I want to emphasize here, however, is not the content of my realization (the way that Frege's rationalism guided his conception of sense): I want to emphasize the effect that the realization had on me.

I retain an absolutely vivid image of the moment when the realization came to me. I was working alone late at night in a warmly, but dimly lit dining room—not my usual place for working on philosophy. The idea seemed to erupt like a sharp explosion and then to spread like a lava flow. I was completely absorbed. I was keyed-up, but in a way that did not affect a concentration that lent some weight, in retrospect, to the old metaphors of the intellect's being emancipated from time. It was the sort of moment of insight and discovery that one is granted only occasionally, but which sustains intellectual life—both in the thrill of the initial revelation and in the gradual realization and working out of consequences and connections. It is the intellectual counterpart of falling in love in a way that stays solid, develops, and deepens beyond the initial excitement. The experience was a heightened instance of how—for all the frustration of struggling through the difficulty of the subject, and all the tediousness of being careful to put things in order

¹ The Journal of Philosophy, 83 (1986), 697–720.

and avoid foreseeable mistakes—philosophy can be both thrilling and lifesustaining.

The experience changed my attitude toward engagement with Frege, and indeed toward the role of the history of philosophy in my broader philosophical work. Studying Frege became not merely an exercise in intellectual hygiene and development. It became a means of philosophical discovery. There is much that remains to be understood about Frege. There are whole reaches of his thought that offer the possibility of breakthrough insights to students of his work. I invite the reader to join in the quest for further discovery.

In landing at UCLA after ejecting from graduate school, I was very fortunate to have three senior colleagues who had an exceptionally deep understanding of Frege. I had several helpful conversations with Montgomery Furth when I was starting out. Furth's translation and introduction to *The Basic Laws of Arithmetic* and his "Two Types of Denotation" were invaluable in my early Frege education.² Deplorably, the former work is out of print. Furth's writing about Frege remains among the best introductions.

Alonzo Church was a sometimes ghostly, sometimes substantial, presence in my early years at UCLA. Some of us used to joke that Church was Frege himself, having learned English—with his German origins thinly disguised by the overlay of a Virginia accent—and having picked up more than a few inches and pounds. Church was not a person one conversed idly with. I audited his courses, read his work, and was influenced by his intellectual standards and by the power of his pragmatic rationalist point of view.³ Often, experiencing the presence of a great intellectual has an effect that goes well beyond what mere reading or even listening could achieve. My experience of Church was of this sort. Church did as much as anyone to make Frege's work effective in twentieth-century philosophy. His particular impact on my understanding of Frege was very substantial—in inspiration, in the formation of standards, and in developing instincts for Frege's ways of thinking. Furth and Church are no longer among the living. So my thanks to them must be correspondingly attenuated.

The third colleague who influenced my understanding of Frege remains a colleague. I have greatly benefitted from the intellectual example and historical-philosophical instincts of David Kaplan. Kaplan had been a student of both Church and Carnap. His early work was in formal Fregean semantics. He has maintained a pedagogical and systematic interest in Frege throughout his career. Although Kaplan disclaims using historical methodology, he reads as

² Gottlob Frege, *The Basic Laws of Arithmetic: Exposition of the System*, translated and edited, with an introduction by Montgomery Furth (Berkeley, University of California Press, 1967); Montgomery Furth, "Two Types of Denotation", in *Studies in Logical Theory*, American Philosophical Quarterly Monograph Series, Monograph no. 2 (Oxford, Basil Blackwell, 1968).

³ I came to be an editor of Church's work, a task I began in the late 1970s: *The Collected Works of Alonzo Church* (Cambridge, Mass.; MIT Press, forthcoming).

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closely as anyone I know. His historical instincts about Frege are reliable and true. Repeatedly, I have found, by checking texts, that Kaplan's "off the cuff" claims about Frege go to the heart of both large structure and subtle nuance in Frege's conceptions.

As any teacher must acknowledge, I have benefited from the enthusiasm, questions, and insights of many students. Among these, I specially think of Nathan Salmon, Marco Ruffino, and Simon Evnine all of whom went on to write on Frege.

I have also learned a great deal from Charles Parsons and Tony Anderson over the years. Both have been valuable interlocutors. The occasions on which we interacted are few in number, but large in impact. More recently, I have been stimulated in fruitful ways by discussions of Frege with Christopher Peacocke.

Finally, I want to acknowledge more personal debts. My family supported and endured—chiefly my wife Dorli, but also my sons Johannes and Daniel and my parents Mary (now deceased) and Dan.