

Theory and History of Ontology (www.ontology.co) by Raul Corazzon | e-mail: rc@ontology.co

Selected bibliography on Frege's Ontology

Contents

This part of the section [Ontologists of 19th and 20th centuries](#) includes of the following pages:

[Frege's Ontology: Being, Existence, and Truth](#)

Selected bibliography on Frege's Ontology (Current page)

Bibliography

1. Angelelli, Ignacio. 1967. *Studies in Gottlob Frege and Traditional Philosophy*. Dordrecht: D. Reidel.

Contents: 0. Introduction 1; 1. Ontology 9; 2. Semantics 37; 3. The so-called logical relations 92; 4. The traditional lack of distinction between UF [das Fallen eines Einzelnen unter einen Begriff] and UO [the relation of subordination between two concepts] 107; 5. 'Merkmal-Eigenschaft' 138; 6. Function 150; 7. The idea of levels ('Stufen') in the philosophical tradition 192; 8. 'Wertverlauf' 205; 9. Existence 224; 10. Number 231; 11. The main results of the present investigation 252; Appendix 261; Bibliography 274; Index of names 287; Index of subjects 291.

From the Introduction: "The present work is not intended to be a presentation of or an introduction to Frege's doctrines (though it may be so in some respects). It presupposes a general knowledge of Frege's main doctrines and terminology, as well as of the main recent discussions on Frege.

Fregean terminology or doctrines are explained only so far as is necessary for each single discussion. (For instance, from an explanatory point of view, Frege's ideas on number should have been presented at the beginning, and not in the last chapter.)

As has been said, Frege's different aspects are distributed according to a hierarchy, in which his insight into *number* has the central place.

Nevertheless, in looking for an answer to our primary question, the *method* used has been analytical rather than synthetical; thereby, of course, the deep unity of Frege's thought has continually been taken into account.

Some of the philosophically relevant aspects of Frege's philosophy have been, so to speak, isolated, and the general question of his significance in the context of the philosophical tradition has been reiterated in reference to each single aspect. Thus the general question has split into a set of particular investigations, which is reflected in the title of the present work.

(...)

Each one of these 'Studies on G. Frege and Traditional Philosophy' is intended to satisfy simultaneously, at least in some degree, the following three conditions:

- (1) that they be a critical discussion of some fragment of Frege's thought;
- (2) that they be an application of Fregean doctrines to the philosophical past;

(3) that they be a study of some feature of the philosophical tradition which seems *necessary* for a better understanding of Frege's doctrines, and this in two ways: (a) intrinsically (i.e., a Fregean doctrine is confusing or not easily intelligible unless it is situated in the whole context of Western philosophy), (b) extrinsically (i.e., a Fregean doctrine, clear enough in itself, may be better appreciated in its full significance by comparing it with some similar doctrine of the philosophical tradition)." pp. 2-4

2. ———. 1967. "On Identity and Interchangeability in Leibniz and Frege." *Notre Dame Journal of Formal Logic* no. 8:94-100.
3. ———. 1976. "Friends and Opponents of the Substitutivity of Identical in the History of Logic." In *Studien Zu Frege / Studies on Frege I - Iii*, edited by Schirn, Matthias, 141-166. Stuttgart: Fromman-Holzboog.
- Vol. II
4. ———. 1982. "Frege's Notion of 'Bedeutung'." In *Logic, Methodology and Philosophy of Science Vol. Vi. Proceedings of the Sixth International Congress of Logic, Methodology and Philosophy of Science*, edited by Cohen, Jonathan, 735-754. Amsterdam: North-Holland.
5. ———. 1984. "Frege and Abstraction." *Philosophia Naturalis* no. 21:453-471.

I list, and quote from Frege's texts on abstraction (section 1). Their content falls under three rubrics: ordinary abstraction, magical abstraction and definitions by abstraction. Frege's remarks on each of these types of abstraction are examined (sections 2, 3, 4). The result (section 5) is negative: Frege was not interested in abstraction; in fact, he even recommended that the term 'abstraction' be avoided. The phrase 'definition by abstraction' is mentioned by Frege just once, in a letter to Russell. Although Frege has hardly anything to say about it, that Peanian phrase leads to a wider historical discussion (section 6) in which two methods are contrasted: the abstraction method (Peano, Weyl, Lorenzen) and the looking-around method (Frege, Carnap et al.). The phrase 'definition by abstraction', originally designed by Peano to refer to the abstraction method, ended up being used, quite inappropriately, as a designation of the looking-around procedure.

Peano's abstraction method may be referred to as "modern abstraction", insofar as it improves upon the traditional theories of abstraction. In section 7 it is argued that modern abstraction rescues the pre-Fregean persistent attempts to define number as product of abstraction. These pre-Fregean attempts, right in their purpose, went astray in their application of abstraction, basically because of lacking a logico-linguistically well defined theory of abstraction. If reconstructed by means of modern abstraction, the pre-Fregean attempts appear (1) to be immune to Frege's criticisms, (2) to yield a better notion of number than Frege's own, "logistic", looking-around inspired definition.

Also in section 7, modern abstraction is shown to establish a "bridge" between the traditional and Fregean theories of predication."

Note: I am grateful to CAMLS (Committee for attendance to meetings of learned societies) as well as to the Liberal Arts Foundations, The University of Texas at Austin, for helping me to attend the VII International Congress of Logic, Methodology and Philosophy of Science, Salzburg, July 1983, where this paper was presented. An abstract of the paper, published at the time of the meeting, needs the following two qualifications: a) "Frege refers to abstraction on several occasions, always negatively": this is wrong to the extent that in Frege's references to ordinary abstraction there is no criticism. (b) "Numbers as set of units" is not a traditional

notion "vindicated" by modern abstraction except in the queer sense that the predicate "x is a set of units" might be shown to be invariant with respect to underlying equivalence relation of one-one correspondence among the sets from which number is abstracted.

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7. Bar-Elli, Gilead. 1996. *The Sense of Reference. Intentionality in Frege*. Berlin: Walter de Gruyter.
8. Beaney, Michael. 1996. *Frege: Making Sense*. London: Duckworth.
9. ———. 1997. *The Frege Reader*. Oxford: Blackwell.
10. Beaney, Michael, and Reck, Erich H., eds. 2005. *Frege's Philosophy in Context*. New York: Routledge.
- Gottlob Frege. Critical Assessments of Leading Philosophers. Vol. I
11. ———, eds. 2005. *Frege's Philosophy of Logic*. New York: Routledge.
- Gottlob Frege. Critical Assessments of Leading Philosophers. Vol. II
12. ———, eds. 2005. *Frege's Philosophy of Mathematics*. New York: Routledge.
- Gottlob Frege. Critical Assessments of Leading Philosophers. Vol. III
13. ———, eds. 2005. *Frege's Philosophy of Thought and Language*. New York: Routledge.
- Gottlob Frege. Critical Assessments of Leading Philosophers. Vol. IV
14. Bell, David. 1979. *Frege's Theory of Judgement*. Oxford: Clarendon Press.
15. ———. 1980. "On the Translation of Frege's "Bedeutung"." *Analysis* no. 60:191-195.
16. ———. 1987. "Thoughts." *Notre Dame Journal of Formal Logic* no. 28:36-50.
17. Benoist, Jocelyn. 1998. "Qu'est-Ce Qu'un Jugement? Brentano, Frege, Husserl." *Études Phénoménologiques* no. 14 (27-28):169-192.
18. Blanchette, Patricia A. 2012. *Frege's Conception of Logic*. New York: Oxford University Press.
19. Born, Rainer. 1996. "Frege." In *Routledge History of Philosophy. Volume IX: Philosophy of Science, Logic and Mathematics in the Twentieth Century*, edited by

Kearney, Richard, 124-156. New York: Routledge.

20. Burge, Tyler. 1977. "Belief *De Re*." *Journal of Philosophy* no. 74:338-362.
21. ———. 1979. "Sinning against Frege." *Philosophical Review* no. 88:398-432.
22. ———. 1984. "Frege on Extensions of Concepts, from 1884 to 1903." *Philosophical Review* no. 93:3-34.
23. ———. 1984. "The Concept of Truth in Frege's Program." *Philosophia Naturalis* no. 21:507-512.
24. ———. 1986. "Frege on Truth." In *Frege Synthesized*, edited by Haaparanta, Leila and Hintikka, Jaakko, 97-154. Dordrecht: Reidel.

From the General Introduction by Leila Haaparanta and Jaakko Hintikka: "In his paper, entitled 'Frege on Truth', Tyler Burge suggests that Frege's odd-sounding conclusion about truth and falsity should be taken seriously. In the first section of his article he claims that too little attention has been paid to the pragmatic basis of Frege's view that truth values are objects. According to Burge, Frege is committed to the doctrine that logic is primarily concerned with the normative notion of truth. The second section of Burge's paper consists mainly of the criticism of Dummett's interpretation of Frege's theses on truth values. In section III Burge purports to show how Frege's identification of the truth values with particular objects has its sources in 'some of his deepest philosophical conceptions'. He holds the view that 'in particular, it proceeds from a theory about the nature of logical objects, from a thesis about the aim and ordering of logic, and from his conceptions of assertion and truth.'" p. 6

25. ———. 1992. "Frege on Knowing the Third Realm." *Mind* no. 101:633-650.
26. ———. 2005. *Truth, Thought, Reason. Essays on Frege*. Oxford: Clarendon Press.
27. Carl, Wolfgang. 1994. *Frege's Theory of Sense and Reference. Its Origins and Scope*. Cambridge: Cambridge University Press.
28. Currie, Gregory. 1980. "Frege on Thoughts." *Mind* no. 89:234-248.
29. ———. 1982. *Frege. An Introduction to His Philosophy*. Sussex: The Harvester Press.
30. Dejnožka, Jan. 1996. *The Ontology of the Analytic Tradition and Its Origins. Realism and Identity in Frege, Russell, Wittgenstein, and Quine*. Lanham: Littlefield Adams Books.

Paperback edition reprinted with corrections, 2002; reprinted with further corrections, 2003.

"While many books discuss the individual achievements of Frege, Russell, Wittgenstein, and Quine, few books consider how the thought of all four thinkers

bears on the fundamental questions of twentieth century philosophy. This book is about existence-identity connections in Frege, Russell, Wittgenstein, and Quine. The thesis of the book is that there is a general form of ontology, modified realism, which these great analysts share not only with each other, but with most great philosophers in the Western tradition. Modified realism is the view that in some sense there are both real identities and conceptual (or linguistic) identities. In more familiar language, it is the view that there are both real distinctions and distinctions in reason (or in language). Thus in modified realism, there are *some* real beings which can serve as a basis for accommodating possibly huge amounts of conceptual or linguistic relativity, or objectual identities' 'shifting' as sortal concepts or sortal terms 'shift.' Therefore, on the fundamental level of ontology, the linguistic turn was not a radical break from traditional substance theory. Dejnoška also holds that the conflict in all four analysts between private language arguments (which imply various kinds of realism) and conceptual "shifting" (which suggests conceptual relativism) is best resolved by, and is in fact implicitly resolved by, their respective kinds of modified realism. Frege and Russell, not Wittgenstein and Quine, emerge as the true analytic progenitors of 'no entity without identity,' offering between them at least twenty-nine private language arguments and fifty-eight 'no entity without identity' theories."

31. ———. 2007. "Dummett's Backward Road to Frege and to Intuitionism." In *The Philosophy of Michael Dummett. The Library of Living Philosophers*, edited by Auxier, Randall E., 55-113. La Salle: Open Court.

"This paper is on Michael Dummett's paper, "The Context Principle: Centre of Frege's Philosophy" (read in 1993, published in 1995), in which Dummett revises his thinking on Frege. But it is really on Frege. I argue that Dummett's semantic program for Frege rests on a scholarly and philosophical mistake. Namely, it takes what Russell calls the backward road from reference to sense. Since Dummett endorses the backward road, I must show that the mistake is genuine. But I need not enter the murky waters of "On Denoting" to do so, since I make the mistake independently clear. After arguing that no senses are objects or functions, I show how we can keep Frege's context principle from bifurcating into one principle for senses and another for references. I conclude by showing that intuitionism is a form of the backward road and shares in the mistake." (Jan Dejnoška)

"Thus, I recant my earlier view and am now in full agreement with Jan Dejnoška that senses - even thoughts - cannot be objects. He deserves credit for perceiving this....The whole apparatus of objects, concepts, and functions is inapplicable in the realm of sense. Dr. Dejnoška perceives this too....I think now that Frege ought to have held that view, and I applaud Dr. Dejnoška's recognition of this." Michael Dummett, "Reply to Jan Dejnoška," in *The Philosophy of Michael Dummett*, 122-23.

32. ———. 2010. "Dummett's Forward Road to Frege and to Intuitionism." *Diametros* no. 25:118-131.

"This paper continues my discussion of Frege with Michael Dummett in *The Philosophy of Michael Dummett* (2007). Most of it is about Dummett's adopting my view that Frege's senses cannot be objects. The issues include: the cognitive order versus the ontological order for the forward road; the nature and identity of senses; the different senses of "intension;" the nature of saturation; whether special quantifiers are now needed for senses; and Frege's earlier and later permutation arguments. I also continue our discussion of the implications of the forward road for intuitionism."

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Second edition 1981

34. ———. 1979. "Was Frege a Philosopher of Language?" *Revue Internationale de Philosophie* no. 33:786-810.
 35. ———. 1981. *The Interpretation of Frege's Philosophy*. London: Duckworth.
 36. ———. 1995. *Frege: Philosophy of Mathematics*. Harvard: Harvard University Press.
 37. ———. 1996. *Frege and Other Philosophers*. Oxford: Oxford University Press.
 38. Falkenberg, Gabriel. 1998. *Sinn, Bedeutung, Intensionalität: Der Fregesche Weg*. Tübingen: Mohr Siebeck.
 39. Føllesdal, Dagfinn. 1994. "Husserl and Frege: A Contribution to Elucidating the Origins of Phenomenological Philosophy." In *Mind, Meaning, and Mathematics. Essays on the Philosophical Views of Husserl and Frege*, edited by Haaparanta, Leila, 3-50. Dordrecht: Kluwer.
- Originally published in German as: *Husserl und Frege. Ein Beitrag zur Beleuchtung der Entstehung der phänomenologischen Philosophie*, Oslo, Aschehoug, 1958.
40. ———. 2001. "Bolzano, Frege and Husserl on Reference and Object." In *Future Pasts. The Analytic Tradition in Twentieth Century Philosophy*, edited by Floyd, Julet and Shieh, Sanford, 67-80. Oxford: Oxford University Press.
 41. Forgie, William. 2000. "Kant and Frege: Existence as a Second Level Property." *Kant Studien* no. 91:165-177.
 42. Gabriel, Gottfried. 1984. "Fregean Connection: *Bedeutung*, Value and Truth-Value." *Philosophical Quarterly* no. 34:372-376.
 43. Gabriel, Gottfried, and Dathe, Uwe, eds. 2000. *Gottlob Frege: Werk Und Wirkung. Mit Den Unveröffentlichten Vorschlägen Für Ein Wahlgesetz Von Gottlob Frege*. Paderborn: Mentis.
 44. Geach, Peter Thomas, and Anscombe, Gertrud Elisabeth. 1961. *Three Philosophers*. Oxford: Blackwell.
- Contents: Analytical Table of Contents VI-XX; G. E. M. Anscombe: Aristotle: The Search for Substance 1; P. T. Geach: Aquinas 65; P. T. Geach: Frege 127-162.
45. Goldfarb, Warren. 2001. "Frege's Conception of Logic." In *Future Pasts. The Analytic Tradition in Twentieth Century Philosophy*, edited by Floyd, Julet and Shieh, Sanford, 25-42. Oxford: Oxford University Press.
 46. Greimann, Dirk. 2003. *Freges Konzeption Der Wahrheit*. Hildesheim: Georg Olms.

47. ———, ed. 2003. *Das Wahre Und Das Falsche*. Hildesheim: Georg Olms.
48. Grossmann, Reinhardt. 1961. "Frege's Ontology." *Philosophical Review* no. 70:23-40.

Reprinted in: Edwin B. Allaire [and others], *Essays in Ontology*, The Hague, Martinus Nijhoff, 1963, pp. 106-120; reprinted also in: D. E. Klemke (ed.), *Essays on Frege*, Urbana, University of Illinois Press, 1974, pp. 79-98.
49. ———. 1969. *Reflections on Frege's Philosophy*. Evanston: Northwestern University Press.
50. Guenther, Franz. 1984. "Comments on Hintikka's 'a Hundred Years Later'." *Synthese* no. 59:51-58.
51. Haaparanta, Leila. 1985. *Frege's Doctrine of Being*. Helsinki: Acta Philosophica Fennica.

Contents: Preface 3; A note on the textual references and the bibliography 5; I. Introduction 9; II. The interpretational framework 27; III. The origin of the thesis concerning the ambiguity of the word 'Is' 47; IV. Identity and predication 59; V. Existence 128; VI. Concluding remarks 159; Bibliography 162; Index of names 179.

"The purpose of this work is to clarify the philosophical basis of Frege's doctrine concerning the word 'is'. Frege's doctrine of being is partly considered in its historical setting, formed mainly by Leibniz and Kant. Since the ambiguity thesis is one of the cornerstones of Frege's new logic, this work will, to some extent, help to indicate how Frege arrived at his great logical innovation. I shall proceed by first presenting a short survey of the different approaches to Frege's philosophy and thereafter outlining Frege's historical setting (Chapter II.1.). Then I shall present the main features of Frege's view of logic (Chapter II.2.). After that, I shall say a few words of the history of the word 'being' in philosophical and philological literature and study Frege's texts concerning the ambiguity doctrine (Chapter III). In Chapter IV there is a discussion on Frege's distinction between identity and predication with reference to Leibniz's and Kant's thought and some remarks are also made on class-inclusion. In Chapter V there are comments on Frege's doctrine of existence with reference to Kant's ideas. Finally, I shall make some concluding remarks on Frege in a wider historical context (Chapter VI). Chapter II will give the interpretational framework for considering Frege's doctrine of being. Chapters IV and V are meant to show how this general hypothesis works in the textual material and thereby to yield a detailed interpretation of Frege's view." pp. 16-17.

52. ———. 1986. "Frege on Existence." In *Frege Synthesized*, edited by Haaparanta, Leila and Hintikka, Jaakko, 155-174. Dordrecht: Reidel.

From the General Introduction by Leila Haaparanta and Jaakko Hintikka: "In her article 'Frege on Existence' Leila Haaparanta emphasizes that Frege's greatest insight was the idea of first-order language, which, to a large extent, motivated the rest of his innovations. Haaparanta focuses her attention on Frege's concept of existence, which receives special attention in Frege's thought in connection with the thesis concerning the ambiguity of such words for being as the English 'is'. The ambiguity thesis was an important part of the Fregean paradigm of first-order logic. Haaparanta argues that Frege does not only assume the word 'is' to be ambiguous

but that he considers 'exists', or the 'is' of existence, to be an equivocal word. She suggests that the equivocality view has a metaphysical and epistemological background in Frege's thought. Her paper thus pushes a great deal further the suggestions of Jaakko Hintikka mentioned earlier in this Introduction." p. 6

53. ———. 1986. "On Frege's Concept of Being." In *The Logic of Being. Historical Studies*, edited by Hintikka, Jaakko and Knuuttila, Simo, 269-289. Dordrecht: Reidel Publishing Company.
54. ———, ed. 1994. *Mind, Meaning, and Mathematics. Essays on the Philosophical Views of Husserl and Frege*. Dordrecht: Kluwer.
55. ———. 2001. "Existence and Propositional Attitudes: A Fregean Analysis." *Logical Analysis and History of Philosophy* no. 4:75-86.
56. Haaparanta, Leila, and Hintikka, Jaakko, eds. 1986. *Frege Synthesized. Essays on the Philosophical and Foundational Work of Gottlob Frege*. Dordrecht: Kluwer.

Contents: Part I. Introduction

Leila Haaparanta and Jaakko Hintikka: General introduction 3; Joan Weiner: Putting Frege in perspective 9;

Part II. Semantics and epistemology

Jean van Heijenoort: Frege and vagueness 31; Hans Sluga: Semantic content and cognitive sense 47; Thomas G. Ricketts: Objectivity and Objecthood: Frege's metaphysics of judgment 65; Tyler Burge: Frege on truth 97; Leila Haaparanta: Frege on existence 155;

Part III. Logical theory

Michael D. Resnik: Frege's proof of referentiality 177; Nino B. Cocchiarella: Frege, Russell and Logicism: a logical reconstruction 197; Robert B. Brandom: Frege's technical concepts: some recent developments 253;

Part IV. Philosophy of mathematics

Philip Kitcher: Frege, Dedekind, and the philosophy of mathematics 299; Gregory Currie: Continuity and change in Frege's philosophy of mathematics 345; A. W. Moore and Andrew Rein: *Grundgesetze*, Section 10 375; Index of names 385; Index of subjects 388-390.

From the General Introduction: "In recent literature [about Frege], one can also find a wealth of new and sometimes controversial viewpoints. For instance, Jean van Heijenoort has called our attention to an important but neglected aspect of Frege's attitude to logic and language that he calls 'logic as language'. Hans Slugs has challenged on a large scale the received view of Frege as a lonely figure in nineteenth-century philosophy whose ancestry goes to medieval objectivists rather than his German predecessors. Sluga wants to place Frege firmly in the middle of the German philosophical tradition of his day. It is indeed unmistakable that there are, for instance, Kantian elements in his thinking that had earlier been overlooked. Indeed, the idea of logic as language is likely to be one of them. Another one is the sharp contrast between the realm of thinking and understanding and the realm of sense and intuition. Sluga's influence is illustrated amply in several papers in this volume. In an attempt to reverse the traditional priorities, Jaakko Hintikka has suggested, relying partly on van Heijenoort's interpretation, that the crucial part of Frege's work in semantics lies in his ideas about the semantics of the familiar elementary logic (truth-functions and quantification) rather than in Frege's theory of sense and reference, which is merely intensional frosting on a more important extensional cake, even though it is typically given the pride of place in expositions in Frege's semantics. As a part of this attempted reversal of emphasis, Jaakko Hintikka has also called attention to the role Frege played in convincing almost

everyone that verbs for being had to be treated as multiply ambiguous between the 'is' of identity, the 'is' of predication, the 'is' of existence, and the 'is' of class-inclusion -- a view that had been embraced by few major figures (if any) before Frege, with the exception of John Stuart Mill and Augustus De Morgan. Hintikka has gone on to challenge this ambiguity thesis. At the same time, Frege's role in the genesis of another major twentieth-century philosophical movement, the phenomenological one, has become an important issue. Even the translation of Frege's key term '*Bedeutung*' as 'reference' has become controversial. The interpretation of Frege is thus thrown largely back in the melting pot. In editing this volume, we have not tried to publish the last word on Frege. Even though we may harbor such ambitions ourselves, they are not what has led to the present editorial enterprise. What we have tried to do is to bring together some of the best ongoing work on Frege. Even though the ultimate judgment on our success lies with our readers, we want to register our satisfaction with all the contributions."

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58. Heijenoort, Jean van. 1977. "Sense in Frege." *Journal of Philosophical Logic* no. 6:93-102.

Reprinted in: J. Van Heijenoort - *Selected Essays* - Napoli, Bibliopolis, 1985, pp. 55-63
59. ———. 1977. "Frege on Sense Identity." *Journal of Philosophical Logic* no. 6:93-102.

Reprinted in: J. Van Heijenoort - *Selected Essays* - Napoli, Bibliopolis, 1985, pp. 65-69.
60. Hill, Claire Ortiz. 1991. *Word and Object in Husserl, Frege, and Russell. The Roots of Twentieth-Century Philosophy*. Athens, Ohio: Ohio University Press.

Reprinted 2001.

Contents: Abbreviations IX; Preliminary terminological comments XI; Glossary XIII; Acknowledgments XIV; Introduction 1.

Part One: Logic, realism and the foundations of arithmetic

1. The argument that Frege influenced Husserl 7; 2. Husserl, Frege, and psychologism 13; 3. Sense, meaning, and noema; 4. Husserl's 1891 critique of Frege 43; 5. Frege's review and the development of Husserl's thought 57; Conclusion: analyticity 91.

Part Two: Conceptual clarity

Introduction 99; 6. Intensions and extensions 103; 7. Presentation and ideas 125; 8. Function and concept 137; 9. On denoting 147; Conclusion: The way *things* are 163; Notes 175; Bibliography 191; Index 215.

From the Introduction: "As a book by the founder of phenomenology that examines Frege's ideas from Brentano's empirical standpoint, Husserl's *Philosophy of Arithmetic* is both an early work of phenomenology and of logical empiricism. In it Husserl predicted the failure of Frege's attempt to logicize arithmetic and to mathematize logic two years before the publication of the *Basic Laws of Arithmetic* in 1893. I hope to show that Husserl did so in terms that would prefigure both the account Frege would give of his error after Russell encountered the paradoxes ten years later and the discussions of *Principia Mathematica*. Moreover, in locating the source of Frege's difficulties in the ambiguous theory of identity, meaning, and denotation that forms the basis of Frege's logical project and generates Russell's contradictions, Husserl's discussions indicate that these contradictions may have as

serious consequences for twentieth century philosophy of language as they have had for the philosophy of mathematics.

This book is about these Austro-German roots of twentieth century philosophy. It is mainly about the origins of analytic philosophy, about the transmission of Frege's thought to the English speaking world, and about the relevance of Husserl's early criticism of Frege's *Foundations of Arithmetic* to some contemporary issues in philosophy. It is more about Husserl the philosopher of logic and mathematics than it is about Husserl the phenomenologist, and it is principally addressed to those members of the philosophical community who, via Russell, have been affected by Frege's logic.

This makes it very different from work on Husserl and Frege that has focused on the importance of Frege's criticism of Husserl's *Philosophy of Arithmetic* and attendant issues. The goal of this book is quite the opposite. It studies the shortcomings in Frege's thought that Husserl flagged and Russell endeavored to overcome. One possible sequel to this book would be a thorough study of Husserl's successes and failures in remedying the philosophical ills he perceived all about him, but that goes beyond the scope of this work, which follows the issues discussed into the work of Russell and his successors." (pp. 3-4)

61. Hill, Claire Ortiz, and Rosado Haddock, Guillermo. 2000. *Husserl or Frege?: Meaning, Objectivity, and Mathematics*. Chicago: Open Court.
62. Hintikka, Jaakko. 1979. "Frege's Hidden Semantics." *Revue Internationale de Philosophie* no. 33:716-722.
63. ———. 1981. "Semantics: A Revolt against Frege." In *Contemporary Philosophy. Vol. I*, edited by Floistad, Guttorm, 57-82. The Hague: Martinus Nijhoff.
64. ———. 1984. "A Hundred Years Later: The Rise and Fall of Frege's Influence in Language Theory." *Synthese* no. 59:27-50.
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67. Kemp, Gary. 1995. "Truth in Frege's 'Law of Truth'." *Synthese* no. 105:31-51.
68. Kenny, Anthony P. 2000. *Frege. An Introduction to the Founder of Modern Analytic Philosophy*. Oxford: Blackwell.
69. Kleemeier, Ulrike. 1997. *Gottlob Frege: Kontext-Prinzip Und Ontologie*. Freiburg: Verlag K. Alber.
70. Klement, Kevin. 2002. *Frege and the Logic of Sense and Reference*. London: Routledge.

71. Klemke, Elmer D., ed. 1968. *Essays on Frege*. Urbana: University of Illinois Press.

Contents: Part 1. Frege's ontology 1;

1. Rulon S. Wells: Frege's ontology 3; 2. Gustav Bergmann: Frege's hidden nominalism 42; 3. E. D. Klemke: Professor Bergmann and Frege's "hidden nominalism" 68; 4. Howard Jackson: Frege's ontology 77; 5. Reinhardt Grossmann: Frege's ontology 79; 6. Charles E. Caton: An apparent difficulty in Frege's ontology 99; 7. Gustav Bergmann: Ontological alternatives 113; 8. E. D. Klemke: Frege's ontology: Realism 157; 9. Moltke S. Gram: Forge, concepts, and ontology 178; Part 2. Frege's semantics 201;

10. Paul D. Wienpahl: Frege's *Sinn und Bedeutung* 203; 11. Richard Rudner: On *Sinn* as a combination of physical properties 219; 12. Max Black: Frege on functions 223; 13. William Marshall: Frege's theory of functions and objects 249; 14. Michael Dummett: Frege on functions: a reply 268; 15. Peter T. Geach Class and concept 284; 16. Michael Dummett: Note: Frege on functions 295; 17. William Marshall: Sense and reference: a reply 298; 18. Michael Dummett: Nominalism 321; 19. John R. Searle: Russell's objections to Frege theory of sense and reference 337; 20. G. E. M. Anscombe: The Fregean *Annahme* 346; 21. Peter T. Geach: Naming and predicating 349; 22. Howard Jackson: Frege on sense-functions 376; 23. Milton Fisk: A paradox in Frege's semantics 382; 24. Rulon S. Wells: Is Frege concept of a function valid? 381; 25. James Bartlett: On questioning the validity of Frege's concept of function 407;

Part 3. Frege's logic and philosophy of mathematics 409;

26. Bertrand Russell: The logical and arithmetical doctrines of Frege 411; 27. H. R. Smart: Frege's logic 448; 28. Peter T. Geach: Frege's *Grundlagen* 467; 29. Peter T. Geach: Quine on classes and properties 479; 30. W. V. Quine: On Frege's way out 485; 31. Peter T. Geach: On Frege's way out 502;

Appendices. Three Essays by Gottlob Frege 505;

A. The thought: a logical inquiry. Translated by A. M. and M. Quinton 507;

B. Compound thoughts. Translated by R. H. Stoothoff 537;

C. On the foundations of geometry. Translated by M. E. Szabo 559

Selected bibliography 577; Index 583-586.

"As Frege's writings became more widely read, a number of articles were written about various aspects of Frege's work-his ontology, semantics, logic. Many of these papers are of great value for the study of Frege, and it was thought desirable to assemble some of them in a single volume. I have divided these Essays into three main categories: (1) Frege's ontology, (2) his semantics, and (3) his logic and philosophy of mathematics. To some extent, these labels are not quite accurate. Thus a paper included in the section on semantics may have something to say regarding Frege's ontology as well. The categorization is a matter of emphasis; if a paper is chiefly about, say, Frege's ontology, then it appears in that section. Two of the papers that are included in the volume have not been previously published. These are "Frege, Concepts, and Ontology," by Prof. Moltke S. Gram of Northwestern University (who so generously offered to write it for its appearance here), and my essay, "Frege's Ontology: Realism."

I have included as appendices three important Essays by Frege, none of which were included in the excellent collection of translations by Geach and Black, but which are valuable for the study of Frege's thought." (from the Preface).

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"In spite of the fact that a number of semantic notions currently used in modal logic go back to the work of Gottlob Frege as it was interpreted by Carnap in 1947 (1) Frege's rare remarks on the subject of modality show that he considered modal distinctions of little relevance to logic. And this may strike one as rather odd: for was it not one of Frege's aims to show that arithmetical propositions are analytic, if they are derivable as theorems in a sufficiently strong logic, on the basis of impeccable definitions and purely logical axioms? Moreover -- the objector may continue -- analytical propositions are knowable a priori (actually, necessarily so) and whatever is knowable a priori is a necessary truth (though, perhaps, not viceversa). Since in *Die Grundlagen der Arithmetik* (2) Frege did appeal to some of these notions, the question arises how we are to interpret his statements on the subject of modality. This may at first seem a rather roundabout way of approaching the subject of assertion and assertion sign, and perhaps it is. But if we are to appreciate the profoundly innovative character of Frege's doctrine of truth and assertion it may prove a good strategy to touch briefly on the way in which Frege addressed the subject of analyticity and modality. Accordingly, after my having advanced some tentative suggestions as to the grounds of Frege's disparaging remarks about modality, I shall concentrate on the issue of Frege's recasting certain traditional distinctions in the theory of judgement, epitomized as it were in the introduction of a new sign into his logical notation -- a truly "momentous event" (to borrow a phrase of Wittgenstein's [TLP 5.452]), who, however, emphatically denied that this was a case in point (TLP 4.442) (3). I shall also mention a number of

- reinterpretations of Frege's judgement stroke proposed by later authors, so that the peculiarity of Frege's symbolic notation can be better appreciated." p. 139
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- "Frege had not one but two different notions of sense, namely, that of 'Über Sinn und Bedeutung' and one implicit in a letter to Husserl of 1906 and elsewhere. This last one originates in Frege's notion of conceptual content. The distinction is used to clarify some obscurities in Frege's thought. In the last section a sort of 'explicans' of Frege's notion of conceptual content is introduced and applied to the semantic analysis of mathematics."
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"The present collection of articles, mainly consisting of new publications, is a critical appreciation of the work of the logician, mathematician and philosopher Gottlob Frege.

Volume I opens the collection with a programmatic contribution determining critically the historical position of Frege's philosophy. The main part of the volume contains papers on logic and philosophy of mathematics. Among other things it is argued that Frege's introduction of the universal quantifier in the *Begriffsschrift* enabled an integration of the statement- and predicate- calculus, going far beyond Boole's logic. Besides textual analyses of special problems concerning Frege's logical system and an elucidation of the 'logistic thesis' in the context of modern investigations in the foundations of mathematics, Frege's discussion of Hilbert's axiomatic method is subjected to critical analysis. One point made is that, contrary to a prejudice in the recent history of mathematics, Frege's understanding of the axiomatic method is tenable."

Contents: Vorwort 11; Einleitung des Herausgebers. Einige Bemerkungen zum Zusammenhang von Logik, Mathematik und Sprachphilosophie bei Frege 13; Zur historisch-kritischen Standortbestimmung der Philosophie Freges; 1. Hans D. Sluga. Frege as a Rationalist 27; Zum wissenschaftlichen Nachlass Freges; 2. Albert Veraart. Geschichte des wissenschaftlichen Nachlasses Gottlob Frege und seiner Edition. Mit einem Katalog des ursprünglichen Bestands der nachgelassenen Schriften Freges 49; Logik und Philosophie der Mathematik. 3. Victor H. Dudman. From Boole to Frege 109; 4. Robert Sternfeld. The logistic thesis 139; 5. W. D. Hart. Imagination, necessity and abstract objects 161; 6. Michael D. Resnik. Die Frege-Hilbert Kontroverse 193; 7. Friedrich Kambartel. Frege und die axiomatische Methode. Zur Kritik mathematik-historischer Legitimationsversuche der formalistischen Ideologie 215; 8. Michael Dummett. Frege on the consistency of mathematical theories 229; 9. Christian Thiel. Gottlob Frege: Die Abstraktion 243; 10. Charles Parsons. Some remarks on Frege's conception of extension 265; 11. Terrell Ward Bynum. The evolution of Frege's Logicism 279; 12. Christian Thiel. Wahrheitswert und Wertverlauf. Zu Freges Argumentation im § 10 de 'Grundlagen der Arithmetik' 287; 13. Franz Kutschera. Freges Begründung der Analysis 301; Abkürzungsverzeichnis 313; Mitarbeiter dieses Bandes 315.

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- reflections of Russell and Quine. Finally, several articles discuss problems of identity in Frege under comparative and analytical aspects."
- Contents: 14. Reinhardt Grossmann. Structures, functions and forms 11; 15. Wolfgang Carl. Frege's Unterscheidung von Gegenstand und Begriff 33; 16. Eike-Henner W. Kluge. Frege's Begriff des Logischeinfachen 51; 17. Gottfried Gabriel. Einige Eiseitigkeiten des Frege'schen Logiksbegriffs 67; 18. Hans-Ulrich Hoche. Vom 'Inhaltsstrich' zum 'Waagerechten'. Ein Beitrag zur Entwicklung der Frege'schen Uteilslehre 87; 19. Leslie Stevenson. Frege zwei Definitionen der Quantifikation 103; 20. Robert Sternfeld. The mathematization of logic: quantified sentences 125; 21. Ignacio Angelelli. Friends and opponents of the substitutivity of Identical in the history of logic 141; 22. Charles E. Caton. 'The idea of sameness challenges reflection' 167; 23. Matthias Schirn. Identität und Identitätsaussage bei Frege 181; 24. Bertram Kienzle. Notiz zu Frege's Theorien der Identität 217; 25. David Wiggins. Frege's problem of the Morning Star and the Evening Star 221; 26. Ronald Suter. Frege und Russell über das 'Paradox der Identität' 257; 27. Haig Khatchadourian. Kripke and Frege on identity statements 271; Abkürzungsverzeichnis 299; Mitarbeiter dieses Bandes 301.
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28. Fred Sommers. Frege or Leibniz? 11; 29. Michael D. Resnik. Frege's Context Principle revisited 35; 30. Ernst Tugendhat. Die Bedeutung des Ausdrucks 'Bedeutung' bei Frege. Postskript 1975 51; 31. Victor H. Dudman. *Bedeutung* for predicates 71; 32. David S. Shwayder. On the determination of reference by sense 85; 33. Leonard Linsky. Frege and Russell on vacuous singular terms 97; 34. Howard Jackson / Malcolm Acock. Sense and sense data 117; 35. Richard M. Martin. Some comments of Frege's pragmatic concerns 139; 36. *Anhang*. Peter Janich. Trägheitsgesetz und Inertialsystem. Zur Kritik G. Frege's and der Definition L. Langes 146; Bibliographie 157; Abkürzungsverzeichnis 198; Mitarbeiter dieses Bandes 200.
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