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Studien zu Frege II
Logik und
Sprachphilosophie

Studies on Frege II
Logic and
Philosophy of Language

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3

FÜR RAINER UND HELGA MARTEN

Die vorliegende, hauptsächlich aus Erstveröffentlichungen zusammengestellte Aufsatzsammlung, befaßt sich kritisch und würdigend mit dem Werk des Logikers, Mathematikers und Philosophen Gottlob Frege.

Band I, der die Trilogie mit einem programmatischen Beitrag zur historisch-kritischen Standortbestimmung der Fregeschen Philosophie eröffnet, versammelt Arbeiten zur Logik und Philosophie der Mathematik. Es zeigt sich, daß Freges Einführung des Allquantors in der Begriffsschrift eine Integration von Aussagen- und Prädikatenkalkül ermöglichte, die entscheidend über Booles Logik hinausführte. Neben textanalytischen Behandlungen spezieller Probleme des Fregeschen Logiksystems und einer Beleuchtung der „logizistischen These“ im Kontext der neueren mathematischen Grundlagenforschung ist Freges Auseinandersetzung mit Hilberts Axiomatik der Geometrie Gegenstand kritischer Untersuchungen. Unter anderem wird aufzuweisen versucht, daß Frege entgegen einem mathematikhistorischen Vorurteil ein methodisch haltbares Verständnis der Axiomatik vorgeschlagen hat.

In Band II werden zunächst Freges Funktionstheorie und sein Logikbegriff einer kritischen Analyse unterzogen. Auf eine Darstellung der Entwicklung seiner Urteilslehre folgen zwei Aufsätze zur Quantifikationstheorie, von denen der eine Freges Übergang von einer substitutionellen zu einer objektuellen Definition der Quantifikation thematisiert, während der andere Freges Ansatz mit entsprechenden Überlegungen bei Russell und Quine vergleicht. Schließlich wird in mehreren Beiträgen die Identitätsproblematik bei Frege unter vergleichenden und theoriekritischen Gesichtspunkten erörtert.

Band III enthält vorwiegend Studien zu Freges Theorie über Sinn und Bedeutung, die allgemein als Beginn der modernen extensionalen und intensionalen Semantik betrachtet wird. Unter anderem wird versucht, eine einheitliche Erklärung des Bedeutungsbegriffs zu geben und den Geltungsbereich des Kontextprinzips in Freges Philosophie abzugrenzen. Weitere Aufsätze befassen sich mit Spezialproblemen der Theorie über Sinn und Bedeutung. Eine um Vollständigkeit bemühte Bibliographie schließt die Sammlung ab.

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.

The first papers of volume II deal, in a critical way, with Frege's theory of functions and his concept of logic. An account showing the development of his doctrine of judgment, is followed by two papers on the theory of quantification. The first discusses Frege's change from a substitutional to an objectual definition of quantification, while the second compares Frege's approach with corresponding reflections of Russell and Quine. Finally, several articles discuss problems of identity in Frege under comparative and analytical aspects.

Volume III chiefly contains studies on Frege's theory of sense and reference, generally regarded as the beginning of modern extensional and intensional semantics. Included is an attempt to provide a uniform explanation of the concept „Bedeutung“ and to delimit the scope of the context principle in Frege's philosophy. Further articles deal with special problems of the theory of sense and reference. A fully comprehensive bibliography is appended to the collection.

Inhalt: Band I

** Erstveröffentlichungen

* Erweiterte Fassungen

Vorwort

Einleitung des Herausgebers

Einige Bemerkungen zum Zusammenhang von Logik, Mathematik
und Sprachphilosophie bei Frege **

Zur historisch-kritischen Standortbestimmung der Philosophie Freges

Hans D. Sluga

1. Frege as a Rationalist **

Zum wissenschaftlichen Nachlaß Freges

Albert Veraart

2. Geschichte des wissenschaftlichen Nachlasses Gottlob Freges und
seiner Edition. Mit einem Katalog des ursprünglichen Bestands der
nachgelassenen Schriften Freges **

Logik und Philosophie der Mathematik

Victor H. Dudman

3. From Boole to Frege **

Robert Sternfeld

4. The Logistic Thesis **

W. D. Hart

5. Imagination, Necessity and Abstract Objects **

Michael D. Resnik

6. Die Frege-Hilbert Kontroverse

Friedrich Kambartel

7. Frege und die axiomatische Methode. Zur Kritik mathematik-
historischer Legitimationsversuche der formalistischen Ideologie

Michael Dummett

8. Frege on the Consistency of Mathematical Theories **

Christian Thiel

9. Gottlob Frege: Die Abstraktion

Charles Parsons

10. Some Remarks on Frege's Conception of Extension **

Terrell Ward Bynum

11. The Evolution of Frege's Logicism **

Christian Thiel

12. Wahrheitswert und Wertverlauf. Zu Freges Argumentation
im § 10 der „Grundgesetze der Arithmetik“ **

Franz Kutschera

13. Freges Begründung der Analysis

Abkürzungsverzeichnis

Mitarbeiter dieses Bandes

Inhalt: Band II

Reinhardt Grossmann

14. Structures, Functions and Forms ** 11

Wolfgang Carl

15. Freges Unterscheidung von Gegenstand und Begriff ** 33

Eike-Henner W. Kluge

16. Freges Begriff des Logischeinfachen ** 51

Gottfried Gabriel

17. Einige Einseitigkeiten des Fregeschen Logikbegriffs ** 67

Hans-Ulrich Hoche

18. Vom ‚Inhaltsstrich‘ zum ‚Waagerechten‘. Ein Beitrag zur
Entwicklung der Fregeschen Urteilslehre ** 87

Leslie Stevenson

19. Freges zwei Definitionen der Quantifikation 103

Robert Sternfeld

20. The Mathematization of Logic: Quantified Sentences ** 125

Ignacio Angelelli

21. Friends and Opponents of the Substitutivity of Identicals
in the History of Logic ** 141

Charles E. Caton

22. „The idea of Sameness challenges reflection“ ** 167

Matthias Schirn

23. Identität und Identitätsaussage bei Frege ** 181

Bertram Kienzle

24. Notiz zu Freges Theorien der Identität ** 217

<i>David Wiggins</i>	
25. Frege's Problem of the Morning Star and the Evening Star **	221
<i>Ronald Suter</i>	
26. Frege und Russell über das „Paradox der Identität“ *	257
<i>Haig Khatchadourian</i>	
27. Kripke and Frege on Identity Statements **	271
Abkürzungsverzeichnis	299
Mitarbeiter dieses Bandes	301

Inhalt: Band III

<i>Fred Sommers</i>	
28. Frege or Leibniz? **	
<i>Michael D. Resnik</i>	
29. Frege's Context Principle Revisited **	
<i>Ernst Tugendhat</i>	
30. Die Bedeutung des Ausdrucks ‚Bedeutung‘ bei Frege. Postskript 1975 **	
<i>Victor H. Dudman</i>	
31. <i>Bedeutung</i> for Predicates **	
<i>David S. Shwayder</i>	
32. On the Determination of Reference by Sense **	
<i>Leonard Linsky</i>	
33. Frege and Russell on Vacuous Singular Terms **	
<i>Howard Jackson/Malcolm Acock</i>	
34. Sense and Sense Data **	
<i>Richard M. Martin</i>	
35. Some Comments on Frege's Pragmatic Concerns **	

Anhang

<i>Peter Janich</i>	
36. Trägheitsgesetz und Inertialsystem. Zur Kritik G. Freges an der Definition L. Langes	
Bibliographie	
Abkürzungsverzeichnis	
Mitarbeiter dieses Bandes	

25. Frege's Problem of the Morning Star and the Evening Star

1. The Problem

In *Über Sinn und Bedeutung* Frege argued as follows:

- (α) The thought or proposition that the Evening Star = the Morning Star is a valuable extension of our knowledge.
- (β) The thought that the Evening Star = the Evening Star is not a valuable extension of our knowledge.
- (γ) Since the thought that the Evening Star = the Morning Star has at least one property not enjoyed by the thought that the Evening Star = the Evening Star, these are not the same thought.
- (δ) The identity of a thought is determined [by context and] by the sense of the sentence which makes it. Therefore the sentences „The Evening Star = the Evening Star“ and „The Evening Star = the Morning Star“, [as used in some fixed context] must have different senses.
- (ε) The sense of a sentence is a function of its syntax and the senses of the words which compose it. So the only way of giving different senses to „The Evening Star = the Evening Star“ and „The Evening Star = the Morning Star“ is to distinguish the sense of „the Evening Star“ from the sense of „the Morning Star“.

It is one of our difficulties with the generalization of this argument from „the Evening Star“ to the class of all singular terms that the resulting theory helps us least where our need is greatest. It helps us least with expressions which are in the strictest and narrowest sense proper names, that is with words such as „Hesperus“, „Cicero“, „Alexander“. The principal difference between these and definite descriptions resides in the fact that they pick out their designata, not by virtue of some designatum satisfying them, but by virtue of having been assigned to this or that individual thing¹. In the case

1 Cp. p. 41, G. E. M. Anscombe's *Introduction to Wittgenstein's Tractatus* for this way of describing the difference.

of definite descriptions like „the planet which rises before the sun rises every morning“ or „the heavenly body other than the sun which is the brightest in the evening sky“, it is very clear (whether we adopt Frege's theory of designation² or prefer Russell's contextual theory of definite descriptions)³, that different definite descriptions of one and the same thing may be formed from lexically distinct constituents. The case is quite other with proper names, however. For these have no semantically distinguishable parts. And if we run Frege's argument through substituting „Hesperus“ for „the Evening Star“ and „Phosphorus“ for „the Morning Star“, then we collide immediately with a serious problem which N. L. Wilson may have been the first to point out⁴, and which Kripke and others have since made notorious. Take the name „Aristotle“. If Aristotle might not have been the pupil of Plato or the teacher of Alexander then no such description has a sense suitable to constitute (however useful it may be to help *specify*) the sense of Aristotle's name⁵. But it is descriptions like these which Frege seems to wish to supply to perform the sense conferring role.

The general form of the difficulty is this. Let φ be any candidate whatever to be a specification or citation of the sense of a proper name n_1 , and sufficient to determine its reference. Then, where b_1 is n_1 's bearer, „if there is any such thing as b_1 , b_1 is φ “ could not, if φ gave or analyzed the very *sense* of n_1 , be false. But a statement such as this, predicating φ of b_1 (if b_1 is an ordinary particular and not, say, a number, and if φ picks out just b_1), cannot be any better than contingent. So genuine proper names cannot have their sense in the manner which Frege's theory apparently requires them to have it⁶.

What then, if it is not given by a description, is the sense of a proper name?

2 See GGA I, § 11. Cp. Quine's *Mathematical Logic*, § 27.

3 See „On Denoting“, *Mind*, 1905.

4 „In Defense of Proper Names against Descriptions“, *Philosophical Studies*, Vol. 4, 1953, pp. 72–78.

5 Cp. Geach and Black (trs. and eds.), *Translations from the Philosophical Writings of Gottlob Frege*, Blackwell, Oxford, 1952, p. 58, footnote. For the distinction between specifying and constituting sense see my „Sentence-Sense, Word-Sense, and Difference of Word-Sense“ in Steinberg and Jacobovits (eds.) *Semantics*. (Cambridge University Press 1971), p. 26, footnote (c).

6 Cp. my „Identity Statements“ in R. J. Butler (ed.) *Analytical Philosophy, Second Series* (Blackwell, Oxford 1965), p. 66.

It does not detract from the point that Kripke himself derives from this difficulty conclusions which are unacceptable. See „Naming and Necessity“ (Lecture II ad init) in *Semantics of Natural Language* (ed. Davidson and Harman), Reidel

What is the contribution of a proper name to the truth grounds of the sentences it occurs in? And how are the senses of different names of one and the same thing to be distinguished?

If one looks at Frege's essay *The Thought* one can find evidence that later in his life Frege came to see the solution of the problem posed by names like „Hesperus“ and „Phosphorus“ as involving some variation in the *Über Sinn und Bedeutung* explanation of the sense of „Alexander“ and „Aristotle“. In *The Thought* he takes very seriously indeed the idea that different speakers attach slightly different senses from one another (or even from themselves at this, that or the other time) to one and the same word. As a matter of fact this idea is already present in *Über Sinn und Bedeutung*, where such

Dordrecht 1972. He declares that proper names do not have any sense at all. This cannot be right, and it may be instructive to say why it cannot.

The sense of an expression, according to Frege's theory, is the contribution the expression makes to the truth-grounds of the sentences in which it occurs, *Grundgesetze*, Vol. I, p. 32 (quoted and commented on at p. 17 of my „Sentence-Sense, Word-Sense, and Difference of Word-Sense“, op. cit.). But then it is analytically excluded that what has been shown by Frege's difficulty at (ε) should be that proper names have no sense in Frege's sense of „sense“. What has encouraged Kripke to draw this conclusion is an identification he should not have made between Frege's sense-reference distinction and Mill's connotation-denotation distinction. To say that a proper name has no connotation is not at all to say that it has no sense. This is clear if one distinguishes these distinctions.

Mill and Frege give different explanations of their respective distinctions. And the results of applying their explanations to various categories of expression coincide only poorly. Consider the case of predicates for instance. The denotation of ‚white‘ is for Mill the class of white things. This is neither the Fregean sense nor the Fregean reference of ‚white‘. The reference of ‚white‘ is for Frege the concept *white* or *what it is to be white*. Since the only thing in Mill's scheme which is at all like this is *whiteness* and since whiteness is what Mill counted the *connotation* of ‚white‘, the only possible correlation one could find between Frege's doctrine and Mill's would be an equivalence of connotation and reference not denotation and reference! Indeed if one pauses for a moment to compare Mill's and Frege's overall projects I think that one will agree that Mill's concern in *System of Logic* is something much less general than the problems on which Frege has embarked in *Über Sinn und Bedeutung*. Frege's concern is with nothing less than the whole foundations of semantics. The idea of sense as contribution to truth-grounds is what Frege uses in the *Grundgesetze* to generalize the theory of sense and reference, and to forge the link between the thought, the sense of a sentence, and the senses of the words which comprise it. The phrase which he uses in *Über Sinn und Bedeutung* for Eigennamen, their „mode of presentation“ is appropriate only to these as a special case. But even for these it matches Mill's idea of connotation poorly at best. There is no inconsistency at all in the claim that a proper name has sense but no connotation.

deviations are described as something to avoid in the „theoretical structure of a demonstrative science“. But there in this earlier essay it is an aside. We find nothing to suggest that this is inherent in the character of proper names, nor shall we encounter anything which implies that, from the nature of the case, the Babylonians' discovery that Hesperus was Phosphorus could not be registered in a purified scientific language as an *a posteriori* discovery. As an aside the only significance of the idea is that it is symptomatic of Frege's slight discomfort with the problem of the senses of proper names.

There is no straightforward way in which this later and, so to speak, privatizing theory of proper names either solves the general difficulty which we have found in the descriptivist theory, or preserves the interest of Frege's original questions in *Über Sinn und Bedeutung*. To the question whether in an *indirect* way, somehow desubjectified, it helps us toward another view of the problem, we shall revert at the end. The answer is affirmative. But, on the face of things, and before the idea is reformulated, it will seem that if we espouse Frege's later view then questions which ought to relate to speakers' clear understanding of one another's publicly expressed thoughts must threaten to degenerate into questions about the very subjectivities which Frege himself, in other connexions, was the first to dismiss from all relevance to meaning or truth conditions^{7A}.

There are three ways in which we can try to move from this difficulty with (ε).

(i) We can explore the merits of Frege's earlier theory in the *Begriffsschrift*, either in its original form or in the form in which it was revised by Wittgenstein in *Tractatus Logico-Philosophicus*. We then solve the problem which Frege thought he saw in informative identity statements by denying that identity is a relation between objects. Such theories I shall call „non-relational“ theories^{7B}. They are demonstrably unsatisfactory.

(ii) The second way is to try to disarm the whole problem which Frege sets himself in *Über Sinn und Bedeutung*. Having disarmed it we dispense with the whole need to postulate different senses for names of one and the same

7^A Indeed, one or two of his most forceful arguments against subjectivism and psychologism in semantic matters are to be found in *The Thought* itself, in formulations which it was to take Wittgenstein many years to improve upon. Surely then, the doctrine of proper names in *The Thought* must be susceptible of some expression which does not offend against these strictures? We shall do our best for it in section (6).

7^B See „Identity Statements“, *op. cit.* for an anti-relational view. If that be possible, I utterly disown the doctrine of identity given in this article.

entity. This I shall call the „same reference same sense theory“⁸. It is the best, I still think, that can be contrived within any semantical framework which both is recognizably Fregean and can treat senses, as Frege treated them, as objective entities. It also corresponds to one option or to a part of one option for a post-Fregean or formal semantical treatment. But it is not the whole truth of the matter.

(iii) The third way is to seek for a solution which distinguishes the senses of „Hesperus“ and „Phosphorus“ without relapsing into the descriptivist theory. Michael Dummett's recent book *Frege: Philosophy of Language* (Duckworth, London 1973) encourages this attempt. I am deeply indebted to Mr. John McDowell of University College, Oxford for the understanding I have from him of how Dummett's doctrine of a difference in the „criteria of identification“ associated with „Hesperus“ and „Phosphorus“ can be transposed and made to work within a formal semantical framework to provide a solution to Frege's problem. It would neither surprise nor dismay me if the reader preferred this third approach to the second. But it does not, in my opinion, completely supersede the *same reference same sense* theory in at least some of the claims of that theory.

Option (i) is explored in Section 2 below. This leads into an attempt to get straighter what the problem of the morning and evening star is not (Section 3). Option (ii) is explored in Sections 4—5. Option (iii) is explored and compared with Option (ii) in Sections 6 following.

2. Non-Relational Theories

By a non-relational theory of identity I mean a theory which denies, despite all appearances, that any concatenation $n_1 += +n_2$ in which n_1 designates entity b_1 and n_2 designates entity b_2 simply predicates the relation of identity of b_1 and b_2 . The sentence $n_1 += +n_2$ may, as in Frege's *Begriffsschrift*, be supposed to say that the designations n_1 and n_2 have „equality of content“. That is one alternative. Another is to maintain (in a rough paraphrase of Wittgenstein's *Tractatus Logico-Philosophicus*) that the names n_1 and n_2 are licensed for intersubstitution. Or something else, slightly more mysterious, may be offered to dispel the supposed illusion that identity statements are straight-forwardly relational⁹.

⁸ For the *same reference same sense* theory see my „Essentialism, Continuity, and Identity“, *Synthese* 1974.

It is difficult to satisfy oneself that any of these theories, by changing the subject from things to signs (or whatever), avoids the criticism which Frege directs in *Über Sinn und Bedeutung* against his own *Begriffsschrift* theory. This criticism was that any linguistic or conceptual account of the content of a statement of identity is mismatched with the essentially astronomical and objectual character of the Babylonian discovery that Hesperus was Phosphorus. (If Wittgenstein's theory seems to escape this problem this is surely due to the mysterious character of the simples which are the bearers of names.) But a finer-grained critique is required to do these theories justice.

The *Begriffsschrift* version of the non-relational theory gives rise to an infinite regress. Asking for the sense of $b_1 = b_2$ I am told that it means that n_1 and n_2 have the same content, or designate only one thing. But this explanation generates a new statement of the same form as the original explicandum — „The content or designatum of $n_1 =$ the content or designatum of n_2 “. Applying the same procedure to this we get „The content or designatum of ,the content or designatum of n_1 ' = the content or designatum of ,the content or designatum of n_2 “. But evidently we never can reach in this way what seems to be needed to carry the explanation through — if anything ever *needed* explaining — a statement only about signs. (If nothing needed explaining why present a theory of identity statements which denies the simple appearances?)

In Wittgenstein's *Tractatus* formulation of the *Begriffsschrift* theory this regress does not arise because the identity-sign does not say anything about the content of the expressions. It is simply a permission to substitute one expression for another. But this only exchanges one difficulty for another. What *grounds* this permission to intersubstitute?

One reply to this question is that identity statements are no more than a by-product of language — are a fortuitous consequence, to be eliminated by a better notation, of the fact that we sometimes have two names for the same thing. But unless we feel we must answer *no*, with Wittgenstein, to the following question we cannot adopt this view:

„Can we understand two names without knowing whether they signify the same thing or two different things? Can we understand a proposition in which two names occur without knowing whether their meaning is the same or different?“ (*Tractatus* 4.243)

The other way of answering the question what grounds the permission to intersubstitute names, and of saving the idea that identity is non-relational, is neo-Leibnizian. It is to claim that identity statements have no distinctive

objectual content to be accounted for, because identity is somehow supervenient upon the totality of other properties and relations of objects. Ian Hacking has defended something like this¹⁰. Support for the view might be mustered from the elimination of „=“ for which Quine has given the recipe¹¹ and from the „mild identification of indiscernibles“¹² which results from Quine's proposal. (Note how very different this position must be from Wittgenstein's. See *Tractatus* 5.5302). Let us briefly explore this option.

Quine shows how any first order theory with „=“ and a finite store of other monadic and polyadic predicates contains the resources to eliminate „=“ as a primitive sign in favour of a complex predicate constructed out of all the other predicates of the theory.

Note, first, that it is impossible following Quine's method to reidentify one stable „=“ predicate between different first order theories having different stocks of primitive predicates except by describing it in second order terms. But that undermines the whole point of the exercise.

Remark, second, that John Wallace¹³ has shown that the method yields stranger results than the ones which Quine himself has countenanced. Applied to a theory with the three unanalyzed predicates ‚x is a forest‘, ‚x is a tree‘ and ‚x grows in y‘ it forces the truth value false upon the sentence „In every forest there grows more than one tree“. A defender of Quine's method may claim that such troubles will disappear as soon as we consider first order theories with expressive power more closely approximating to that of English¹⁴. Wallace suggests that Quine's claim should be rephrased as follows: if a theory has a finite number of unanalyzed predicates, then a finite number of predicates can be added to the theory so that in the resulting expanded theory what we usually intend by identity is eliminable by the prescribed method. But now, for purposes of the idea¹⁵ that identity is

9 As in „Identity Statements“ op. cit. and as in Ian Hacking's reply to my „Identity, Necessity and Physicalism“ forthcoming in *Proceedings of the 1974 Logic Conference at Bristol*, ed. S. Körner (Blackwell, Oxford, 1976).

10 See Hacking, op. cit.

11 *Word and Object* (M. I. T. Press, Cambridge, Mass. 1960), p. 230.

12 Cp. *From a Logical Point of View* (Harvard, 1953), p. 70 and p. 117 f.

13 *Philosophical Grammar*, Stanford University Ph. D. 1964. Published by University Microfilms Ltd., Ann Arbor, Michigan, U. S. A. 1969. See p. 80 ff.

14 To which since it has a quite indefinite number of predicates, Quine's method is scarcely applicable in any case. This only aggravates the first difficulty, of course.

15 As opposed to the purpose of evaluating Quine's claim *per se*. Wallace rejects this too on the ground that the paraphrases of some sentences will involve different entities from the sentences which they paraphrase. See p. 83 op. cit.

supervenient¹⁶ on other properties and relations, everything depends on what predicates are added in order to force the desired truth-value upon sentences involving the constructed predicate put there in lieu of „=“. The appearances can only be saved, in fact, if monadic and polyadic predicates presupposing place- time- or thing-individuation are supplied. It is upon these that identity is supervenient. But that gives the whole game away.

It would be worth pursuing the matter further if it were clearer what it means to deny that identity is a relation between individuals¹⁷. But in practice anti-relational theorists have said little about this. I suppose that they have thought that the argument itself for the conclusion that identity was not a relation would show the purport of the denial that identity was a relation and give content to it. Perhaps this was reasonable¹⁸ — if only the argument against identity as a relation had been good. But it was not, as I shall try now to show. The relevance of this to Frege is that the whole position of the anti-relational theorist arises out of an argument of Frege's, which Frege rejected but evidently failed to persuade others to reject.

3. „Self-Identity“

In *Über Sinn und Bedeutung* Frege explains his own earlier *Begriffsschrift* theory of identity as follows:

If we were to regard equality as a relation between that which the names „*a*“ and „*b*“ designate, it would seem that $a = b$ could not differ from $a = a$ (i. e. provided $a = b$ is true). A relation would thereby be expressed of a thing to itself, and indeed one in which each thing stands to itself but to no other thing. What is intended to be said by $a = b$ then seems to be that the signs or names „*a*“ and „*b*“ designate the same thing, so that those signs themselves would be under discussion.

16 For more on the notion of supervenience see G. E. Moore *Principia Ethica* and Donald Davidson „Mental Events“ in *Experience and Theory*, ed. Foster & Swanson (Duckworth, London, 1971).

17 Cp. p. 310 Kripke, „Naming and Necessity“, op. cit.

18 Perhaps it is only the full answer to a question which provides a full understanding of its sense. Cp. Plato *Meno* 80 D. One need not postulate *anamnesis* to make sense of this possibility, only the idea that understanding is a matter of degree and that there is give and take between the nature of our philosophical puzzlements (e. g. identity) and the shape of our philosophical tools (e. g. the concept of a relation).

It is a plausible psychological hypothesis that there is something in this passage of Frege which continues even now to encourage the idea that there is some problem about identity as a relation between objects. I think we can still feel its influence when, more than fifty years afterwards, the *Philosophical Investigations* of Wittgenstein mock the idea that being identical with itself is a property of a table-lamp. Wittgenstein never attempted any serious elucidation of what a property or relation is. But that has not stopped such remarks from making latter day converts to the non-relational view of identity. The fullest statement of Wittgenstein's argument — and one which he never subsequently improved upon — dates from a time when Frege's writings must be even fresher in Wittgenstein's mind. See *Tractatus* 5.5303¹⁹.

Roughly speaking to say of two things that they are identical is nonsense, and to say of one thing that it is identical with itself is to say nothing at all.

Here we encounter the same sort of transition as in Frege from „ $a = b$ “ to the dilemma: either „ $a = b$ “ is false, is about two things, in which case we find no such relation actually subsisting between a and b , or it is true. But if it is true, the argument goes, and if a is b , then „ $a = b$ “ expresses nothing more than „ $a = a$ “. And „ $a = a$ “ expresses no more in its turn than „ a is itself“. But here, in mere self-identity, one encounters a relation „in which each thing stands to itself“.

There is of course an important difference between Frege and Wittgenstein with regard to this argument. Wittgenstein believes the argument, whereas in Frege the words „provided that $a = b$ is true“ are surely intended as a tell-tale touch. Frege rehearses the argument, but he does not endorse it. Indeed the context is the build-up to his new and radically different theory. According to that new theory, identity is a relation, and „ $=$ “ is a *Beziehungswort* just like any other two argument place concept-word. The *a posteriori* status of „ $a = b$ “ is now explained by the sense-reference distinction.

If Frege thought that it was enough to fault the conclusions of the *Begriffsschrift* theory and that, in the presence of his new theory, the pro-*Begriffsschrift* argument would never tempt anybody else; then he was mistaken. History has since shown that nothing less than a proper disassemblage of its confusions will be enough to force the abandonment of the of the non-

19 Cp. *Philosophische Grammatik* at p. 315 in the Rhees Kenny edition. (Blackwell Oxford 1974.)

relational view, and to dissipate all the confusion with which the two passages I have quoted still infect even the critics of the relational view²⁰.

To fill the lacuna which Frege left, here are two objections to the pro-*Begriffsschrift* argument itself, as opposed to any conclusion it leads to.

Objection (i). If the words „ $a = b$ “ express the identity of a with b , it simply does not follow, even if as a matter of fact the words are true and a is b , that the words „ $a = b$ “ express the judgement that a is a .

Objection (ii). Still less does it follow that the words „ $a = b$ “ or the words „ $a = a$ “ express the proposition that a is identical with *itself*.

To a reader still at the beginning of *Über Sinn und Bedeutung*, objection (i) may seem even more pedantic than objection (ii). After reading Frege's essay he is better prepared of course for the intensionality of the verb „express“, and better apprised of the scope and the significance of intensionality generally. But if he doubts, as it may be rational to doubt, that Frege ever succeeded in making out a clear difference between the senses of *all* the genuine proper names of one and the same thing, then he may still find the objection inconclusive. For if the sense of „ a “ is not demonstrably distinct from the sense of „ b “ then perhaps the forms „ $\xi = a$ “ and „ $\xi = b$ “ not only stand for the same property but also express the same sense. Or so the reader may be left wondering.

(It is certain that such a doubter of objection (i) ought to reflect that if *informativeness* was the whole issue, and that after all is Frege's interest, well, „ $a = b$ “ can only be uninformative to one who is already sufficiently informed of that identity to replace „ b “ by „ a “ to get „ $a = a$ “. For one ignorant, and needing to be informed, this trivialization is not yet possible. But pending a satisfying account and systematic theory of the relation of the sense of an expression to what it can be used to do informatively, this is a mere *aperçu*.)

This brings us to objection (ii). Frege does not in *Sinn und Bedeutung*, or anywhere in his writings²¹, supply everything which is needed to see right through the problem which inheres in the passage from „ $a = b$ “ via „ $a = a$ “ to „ a is itself“. But Frege does make it obvious that there is *something* wrong

20 Cp. Saul Kripke. „It is for example thought [wrongly] that if you have two names like „Cicero“ and „Tully“, and say that Cicero is Tully, you can't really be saying of the object which is both Cicero and Tully *that it is identical with itself*.“ My italics. Lecture III ad init. „Naming and Necessity“ op. cit.

21 But see p. 140 of P. T. Geach *Reference and Generality* (Cornell 1962) for the claim that he was actually aware of the relevant distinctions, even if the notation of *Grundgesetze* I. 36 does not bring them out.

if this be represented as a chain of sentences equivalent in expression. As he points out, we are carried by this chain from the ascription to a of an attribute which a and only a can enjoy to the ascription of an attribute which everything has. That, of course, is the point also being urged, subsequently to Frege, by opponents of the relational view of identity. They say that this is the very absurdity you get from thinking of identity as a relation. But the argument only shows what post-Fregean opponents of identity as a relation think it shows if there is nothing else to fault in the purported chain of equivalents than the supposition that identity is a relation. And there is something else to fault. As already remarked à propos of (i), the pro-*Begriffsschrift* argument rests upon an at least dubious theory of what it is for two relational sentences to *express the same*. The argument also depends on an inadequate theory of what it is for two sentences to *ascribe the same relation*.

He who says $a = a'$ predicates of a what only a can have, the one place property $\lambda x (x = a)$ ^{22A}. Or if you will he predicates of the couple $[a, a]$ the two place relation $(\lambda x \lambda y (x = y))$. But, whichever of these we take, to ascribe it to its subject is not the same as to ascribe to a the one-place property which is ascribed by a man who says that a is identical with itself or $\lambda x (x = x)$, $[a]$. That $\lambda x (x = a)$ and $\lambda x (x = x)$ are different properties can be seen by tracing their actual relationship, which may be displayed as follows. Start with the primitive predicable " $x = y$ " and abstract the property $(\lambda x) (\lambda y) (x = y)$. That this is satisfied by a pair is recorded in our notation by $(\lambda x) (\lambda y) (x = y)$, $[w, z]$. To get a 's own peculiar predicate $(\lambda x) (x = a)$ or $(\lambda w) [(\lambda x, \lambda y (x = y)), [w, a]]$ substitute a designation of a for z in the second free argument place in $(\lambda x) (\lambda y) (x = y)$, $[w, z]$. Bind the remaining free variable with λ . Or to get the simpler designation $(\lambda x) (x = a)$, take the constant a as a value of z in $(\lambda x) (\lambda y) (x = y)$, $[w, z]$, then apply λ -conversion to get $w = a'$. Replace the variable w by the variable x and abstract on x to get $(\lambda x) (x = a)$. To get the universal predicate $(\lambda x) (x = x)$ or $(\lambda w) [(\lambda x) (\lambda y) (x = y)$, $[w, w]]$ substitute the first argument for the second argument in the second argument place in $(\lambda x) (\lambda y) (x = y)$, $[w, z]$ so as to get $(\lambda x) (\lambda y) (x = y)$ $[w, w]$, and then bind the free variable with λ . To get the simpler formula put t for both w and z in $(\lambda x) (\lambda y) (x = y)$, $[w, z]$, apply λ -conversion to get " $t = t$ ", replace t by x to get " $x = x$ " and abstract on x to $(\lambda x) (x = x)$.

22^A For the distinctions ensuing see Chapter V of Geach *Reference and Generality*. For the notation see Alonzo Church, *Introduction to Mathematical Logic*. (Princeton 1956), section .03.

This destroys the principal argument for an anti-relational view of identity. We must explore the other options, and their corresponding views of proper names.

4. The Same Reference Same Sense Theory

Scanning the works of Frege for fresh clues to his view of the sense of proper names in the strict sense of „name“, it is possible to find indications of his having arrived at a formulation which differs radically from the descriptive account of the name thing relation espoused in *Über Sinn und Bedeutung*. I do not mean to imply that Frege necessarily recognized how very different this other way of putting the matter is. In *Ausführungen über Sinn und Bedeutung* he writes^{22B}:

It must be determinate with respect to each object whether it falls under a concept or not. A concept word which does not satisfy this requirement on its designation is designationless. This applies for instance to „μῶλυ“ (Homer, *Odyssey* x. 305) even though certain marks of that concept are specified [in the story]. For this reason the passage of Homer need not be *senseless*, no more than those other passages are senseless in which the name „Nausicaa“ occurs. In reality „Nausicaa“ neither names nor designates anything. But the name *behaves as if it named a girl*, and it is in this way that it secures itself a sense. For purposes of Homer's poem this sense is enough. For that purpose a designationless, truth-valueless thought is sufficient. For science it would not be enough. [My italics]

If we seize upon the thought we discern here that „Nausicaa“ gets its sense by behaving as if it named some girl, and if we apply this thought back to the case where there is a real designatum, then we shall be led to a theory very different from the official *Über Sinn und Bedeutung* doctrine. We may find ourselves saying that a proper name's having a sense simply consists in its designating whatever object has been conventionally assigned to it. To know the sense of name *n* is then a matter of knowing *which* entity *n* has been assigned to. And this, we may reflect, is a piece of knowledge which may be imparted in indefinitely many quite distinct ways.

What should be said on this new view about the role of descriptions in telling which entity a name names? The descriptions „most famous pupil of

22^B Cp. ASB p. 133.