Annotated bibliography of George Englebretsen

Contents

This part of the section Ontologists of 19th and 20th centuries includes of the following pages:

George Englebretsen's Contribution to Traditional Formal Logic (under construction)

Selected bibliography on the Logical work of George Englebretsen (Current page)

Introduction

"In two important senses, Englebretsen is not the inventor of the logic of which he writes, though he no doubt deserves the title of the most dedicated and meticulous expositor of it today. In the first place the logic in question is none other than the so-called 'term logic' usually said to have been invented by Aristotle, taught throughout the middle ages, toyed with by Leibniz, forgotten in the enlightenment and surpassed at last by the great developments in mathematical logic associated with names like Boole, Frege, Russell, Quine. So at least runs the textbook history that the average student of logic would learn today. Term logic figures in the contemporary mind as one of the discarded fashions of science, much like the Ptolemaic system in astronomy. Englebretsen does not claim to invent but only to rehabilitate this logic. And such an effort obviously requires a reassessment of its history, of which the present work provides an outline.

But the logic is not Englebretsen's own in a second way. The book is a sustained and systematic exposition of the life work of Prof. Sommers of Brandeis University, whose efforts have revealed the continuity of term logic from Aristotle to Leibniz and also its character an uncompleted project, with unlimited promise in its application to logic of natural language. Sommers' work comes at a crucial moment, just as the problems in applying formal mathematical structures to ordinary language are coming to be recognized. Sommers' unconventional approach, however, has seemed to many to be moving quickly in the wrong direction, toward the 'errors' of the past and he has thus acquired a reputation as the Ishmael of modern logic.

Professor Englebretsen's work is a systematic exposition and defense of Sommers' far-reaching contributions to logic, placing them in the context of a rectified history of the subject. Term logic is a project abandoned prematurely by logicians deceived by the appearance of security which the prestige of mathematics conferred upon mathematical logic. Recent logicians concluded too quickly that term logic was unformalizable, inadequate to reflect many of the actual inference structures of ordinary language, etc. The work of Sommers has demonstrated these claims to be false in the most appropriate way possible, by constructing a term logic of which they do not hold. Moreover Englebretsen has shown that Sommers' reply on behalf of term logic is not a mere riposte; it is a 'programme' of logic in the fullest sense. It contains a rigorously presented theory not just of the syntax, semantics and rules of inference for a term logic, but also a modal logic, a theory of predication, identity, singular terms, categories and ontology. In the reading of this book it is impossible not to get the idea that here is a vital programme for logic which is deserving of careful consideration and which is bound to lead to a re-evaluation of the traditional dogmas of mathematical logic." (pp. I-II)

From: Graeme Hunter, *Foreword* to: George Englebretsen, *Essays on the Philosophy of Fred Sommers. In Logical Terms*, Lewiston: Edwin Mellen Press, 1990.

Bibliography

For the bibliography of Fred Sommers see the page dedicated to him.

1. Englebretsen, George. 1969. "Knowledge, Negation and Incompatibility." *Journal of Philosophy* no. 66:581-585.
"When epistemologists attempt to establish a distinction between knowledge and belief, very often what they want is a distinction between knowledge and mere belief.
They are interested in the sense of belief that is incompatible with knowing: a sense in which if something is believed it is not known, and if known not believed. This sense of belief (mere belief) is obviously different from the usual notion of belief. In what follows I want to make a start at analyzing the concept of knowing by outlining the relations between knowledge statements (e.g., x knows that y) and other closely related statements." (p. 581)

2. ————. 1971. "Sommers' Theory and the Paradox of Confirmation." *Philosophy of Science* no. 38:438-441.
"In order to confirm any statement of the form (a) A are B we consider a sufficiently large number of A in order to check them for having or failing to have property B. But logic leads us to believe that A are B is equivalent to (b) non-B are non-A. If this is so then it seems reasonable to suppose that we confirm (a) and (b) in the same way. Whatever set of things we consider for confirming one must be the same set that we consider for the other. Yet in confirming (a) the set considered seems to be the set of A, while in confirming (b) the set considered seems to be the set of non-B. How can two logically equivalent statements be confirmable in different ways?
I think this paradox is only apparent. It results from a simple confusion concerning the set of things considered for the confirmation of a statement." (p. 438)

3. ————. 1971. "On the Nature of Sommers' Rule." *Mind* no. 80:608-611.
"The number of recent journal articles (1) concerning Fred Sommers' "rule for enforcing ambiguity "(2) gives witness to an increasing interest in Sommers' way of doing ontology. Some of these articles can be said to display, at best, an undisguised misunderstanding of
just what the rule says. Others show, at worst, an -unwillingness to say what the intent and nature of the rule is. In this paper I want to say clearly just what the nature of the rule for enforcing ambiguity is and show what Sommers intends by its formulation and use.
In " Types and Ontology "(3) Sommers has established an isomorphism between the structure of ordinary language and the ontological structure. The structure of a language can be represented on a "language tree ". A language tree is a mapping of the " sense" relations which hold between the terms of the language. Two terms, P and Q, have the sense relation U (written " U(PQ) ") just in case they can " make sense " together in a subject predicate sentence. If they do not make sense together, then any subject-predicate sentence formed with them will be a category mistake. A language tree can be formed by writing all the terms of the language so that a solid line is drawn only between U-related terms.(4)" (p. 608)
(1) See: Susan Haack, " Equivocality: A. Discussion of Sommers' Views ", *Analysis* (April, 1968), L. R. Reinhardt, " Dualism and Categories ", *Proceedings of the Aristotelian Society*, Vol. lxvi (1965-66), Hugh S. Chandler, " Persons and

Predicability ", *Australasian Journal of Philosophy*, vol. 46, no. 2 (August 1968), and R. van Straaten, " Sommers' Rule and Equivocity ", *Analysi*s (December 1968).
(2) C Predicability ", *Philosophy in America*, Edited by Max Black (Ithaca New York, 1965).
(3) *Philosophical Review*, vol. 72 (1963).
(4) For a full account of how to form a language tree see Fred Sommers, " The Ordinary Language Tree ", *Mind* (1959).

4.   ———. 1971. "Elgood on Sommers' Rules of Sense." *Philosophical Quarterly* no. 21:71-73.
" Several discussions of Fred Sommers's rules of sense have appeared recently. I will examine here the one by A. G. Elgood (this journal, April 1970) because I believe it clearly exemplifies how Sommers's theory is being too often misinterpreted by his critics.' My two points of criticism against Elgood will be brief. First, his formulations for the criterion of type differ- ence are ill-formed. Second, his counter examples fail because they ignore a subtle, but crucial, distinction which can, be extracted from Sommers's theory. " (p. 71)
References
Elgood, A. G. (1970), "Sommers' Rules of Sense," *Philosophical Quarterly*, 20: 166-169.

5.   ———. 1971. "J. O. Nelson on Logical Notation." *Ratio* no. 13:88-89.

6.   ———. 1972. "True Sentences and True Propositions." *Mind* no. 81:451-452.
R. J. [Robin J. Haack] and Susan Haack have argued recently that " true " and " false " are, while univocally predicable of both sentences (tokens) and propositions, primarily predicated of sentences.(1) I do not wish to take issue here with the thesis that sentences rather than propositions
are the primary bearers of truth. What I do want to reject is the view that " true " and " false " can univocally be applied to both sentences and propositions." (p. 451)
(1) " Token-Sentences, Translation and Truth-Value ", *Mind*, vol. lxxix, 1970.

7.   ———. 1972. "Persons and Predicates." *Philosophical Studies* no. 23:393-399.
"My main thesis in this short paper is that the attribute theory of persons is correct but often misunderstood by its critics. We might best begin by comparing our theory with other possible theories of persons. Let us consider three other general sorts of theories: materialism, idealism, and dualism.
According to any materialist theory of persons, a person is nothing more than a material object. Talk about mental (i.e. nonmaterial activities) can be translated into talk about bodily (material) activities. Thus, for the behaviourist, the difference between a person and any other material object lies in the differences between the bodily activities of the two. To say that persons differ from stones in that they (persons) are intelligent is simply to say, on this view, that material objects which are persons often, in certain circumstances, act in ways in which material objects which are stones do not act. This is the view of behaviourists who are materialists. A behaviourist need not be a materialist.
Nor need a materialist be a behaviourist. A materialist might be an 'identity-theorist'. He would hold, then, that a person is nothing more than a material object. But, he distinguishes between persons and other material objects in a way other than that used by the behaviourist materialist.
The identity-theorist argues that a person differs from other material objects in that a person has a mind while other material objects do not. He then goes on to guarantee his materialism by identifying a person's mind with his brain or central nervous system.
For the idealist, a person is simply a mind (or soul or spirit), and minds are immaterial. Here persons differ from material objects simply by not being material. How idealists distinguish persons from other immaterial objects is not always dear. One thing is clear: the idealist who fails to distinguish between immaterial objects which are persons from immaterial objects which are not persons runs the risk of conceiving of persons in terms of those other immaterial objects (e.g. ideas of

impressions or sense data) and thus, like Hume, ending up without a concept of persons." (pp. 393-394)

8. ———. 1972. "Vacuosity." *Mind* no. 81:273-275.
"It is argued here that F. Sommers' notion of vacuousity must be expanded to allow for statements presupposing false statements which may not be existential. the result of this is the enforcement of a distinction between vacuosity and category mistakenness, and, more importantly, a distinction between the spanning and predicability relations which hold between terms and things."

9. ———. 1972. "Sommers on Empty Domains and Existence." *Notre Dame Journal of Formal Logic* no. 13:350-358.

10. ———. 1972. "On van Straaten's Modification of Sommers' Rule." *Philosophical Studies* no. 23:216-219.
"I argue here that R. van Straaten's four modifications of F. Sommers' 'rule for enforcing ambiguity' are based upon a misunderstanding of the basis of the rule and a failure to see the spanning/predicability distinction. The effect is that none of van Straaten's several counterexamples are telling against the rule. In place of van Straaten's modifications I offer the following simple but important changes in the rule: the restriction of things to individuals and the reading of 'makes sense to predicate' and similar phrases in terms of the spanning relation."

11. ———. 1972. "A Revised Category Mistake Argument." *Philosophical Studies* no. 23:421-423.

12. ———. 1972. "Armstrong on Disembodied Minds." *Dialogue* no. 11:576-579.

13. ———. 1973. "The Logic of Negative Theology." *The New Scholasticism* no. 67:226-232.

14. ———. 1973. "Meinong on Existence." *Man and World* no. 6:80-82.
"For several years I was told, and believed, that while Russell's theory of descriptions might he flawed (viz. in the way Strawson showed), his rejection of Meinong's theory of objects, which led to the theory of descriptions, was undoubtedly correct. Now I doubt very much if this is so.
The "official" view is that Meinong had made the mistake of multiplying the senses of "exists" unnecessarily. According to this view, Meinong, since he held that the descriptive components of any meaningful sentence must refer to something, was forced to provide a special kind of existence, subsistence, for entities which are nonexistent but referred to meaningfully. Russell avoided this position by claiming that statements referring to nonexistent entities are meaningful but false (since they logically entail the existence of the entity referred to). I think the official view underestimates Meinong's philosophical abilities. Indeed, I think, rather than engaging in the philosophically dangerous task of multiplying kinds of existence, Meinong was expressing a keen insight into the nature of existential commitment." (p. 80)

15. ———. 1973. "Presupposition, Truth and Existence." *Philosophical Papers* no. 2:39-40.
"Ever since Strawson first introduced the notion of presupposition into logical matters, debate has continued over the nature of this operation.
Is presupposition a logical relation between statements? Formal logic or "informal" logic? Does it mean that there are truth-value gaps? Isn't it just material implication?
According to Strawson, a statement which presupposes a true statement is either true or false but a statement which presupposes a false statement is neither true nor false. These latter kinds of statements are vacuous. Compare this notion of presupposition with that of material implication. A statement which materially implies a true statement is either true or false while a statement which materially implies a false statement is false. What is the relation between 'The present King of France is bald' and 'The present King of France exists'? Strawson says it is one of

presupposition. Russell said it was material implication. The Russellian rejects the notions of presupposition and vacuousity in order to preserve crucial elements of formal logic (viz. truth-functionality and bivalence). The Strawsonian accepts the concepts of presupposition and vacuousity as reflective of important elements in ordinary discourse, and thus denies those parts of formal logic which his opponent treasures." (p. 39)

16.   ———. 1973. "Persons, Predicates and Death." *Second Order* no. 2:67-70.

17.   ———. 1973. "Locke's Language of Proper Names." *Locke Newsletter* no. 4:25-30.
"It is argued here that recent discussions concerning the compatibility of Locke's theory of nominal essences with Geach's thesis (that each use of a proper name must presuppose the ability to use some corresponding general term) fail to appreciate the important difference between the generation of Lockean general ideas (from ideas of individuals) and the generation of Lockean general terms (not from proper names)."

18.   ———. 1973. "Epistemic Logic and Mere Belief." *Logique et Analyse* no. 63-64:374-378.
"In a previous article (1) I argued that the distinction which epistemologists look for between knowing and believing is actually the distinction between knowing and merely believing, where, unlike belief, mere belief is incompatible with knowledge. Using Fred Sommers' notion of predicate negation, (2) where the negation of a predicate is equivalent to the disjunction of all those predicates incompatible with it , I formulated several epistemic statements and drew out ten conditionals which should at least be theorems of any epistemic calculus.
In what follows I want to set up the axioms for an epistemic calculus. A few of these wi l come from my previous list of conditionals. I then want to show that in such a system the necessary conditions for mere belief can be adequately formulated." (p. 375)
(1) "Knowledge, Negation and Incompatibility", *Journal of Philosophy*, Vol. 66 (1969).
(2) "Predicability," in Max Black, ed., *Philosophy in America* (Ithaca, N.Y., 1965), and "On a Fregean Dogma," in *Problems in the Philosophy of Mathematics* (Amsterdam 1967).

19.   ———. 1973. "Suggested Truth-Tables for a Three-Valued Sentential Logic." *International Logic Review* no. 8:255-259.
"Truth-tables for the normal sentential connectives are constructed on the basis of the concept of 'partial values'. On this view, every statement has a truth-value which is a function of an ordered pair of partial values. The first member is either T or non-T and the second is either F or non-F. The four combinations of partial values result in three possible truth-values: true, false, and empty."

20.   ———. 1974. "Sommers on the Predicate 'Exists'." *Philosophical Studies* no. 26:419-423.
"In a series of recent journal articles F. Sommers has developed a logic of terms which differs greatly from the usual logic now taught in the schools. However, Sommers has commited himself to a thesis proper to that logic but not to his: everything exists. It is shown here that such a thesis cannot follow from Sommers' previous work. Using his logic proofs that something exists and that something does not exist are given."

21.   ———. 1974. "A Note on Contrariety." *Notre Dame Journal of Formal Logic* no. 15:613-614.
"It is shown here that S. McCall's proposal, that in addition to the normal sentential operation of negation there is another, more traditional, sentential operation of contrariety ("Contrariety," Notre Dame Journal of Formal Logic, 8, 1967) is misguided. There is indeed a contrariety operator. But, it is a predicate operator rather than a sentential operator. The ability to explicate contrariety is just one of

the advantages which an Aristotelian logic of terms has over modern sentential logic."

22.   ———. 1974. "Brody on Sommers." *Philosophical Studies* no. 26:149-150.

23.   ———. 1974. "Erwin on the Category Mistake Argument." *Second Order* no. 3:47-53.

24.   ———. 1974. "Behaviorism and Perception." *Man and World* no. 7:149-157.
"After distinguishing the ontological question concerning persons (what is the concept of a person?) from the epistemological question (on what grounds does my knowledge of persons rest?) three kinds of behaviorism are cited as responses to the Cartesian answer to the epistemological question. Unlike physicalism and dispositionism, restricted behaviorism denies that knowledge applies at all to myself and goes on to distinguish behavior from bodily activity. On this theory behavior is taken to be interpreted bodily activity -- bodily activity seen as personal behavior."

25.   ———. 1974. "More on Disembodied Minds." *Philosophical Papers* no. 3:48-49.

26.   ———. 1974. "Essentiality." *Journal of Critical Analysis* no. 5:112-117.

27.   ———. 1975. *Speaking of Persons*. Halifax: Dalhousie University Press.
"This monograph is an attempt to defend an attributist theory of the concept of a person. It is held that our ordinary concept of a person is the concept of a noncomposite (contra dualism), material (contra idealism) object, to which both Strawsonian p- and m-predicates apply. Personal identity is accounted for in terms of bodily continuity "and" sortal continuity. Finally, with the aid of F. Sommers' theory of linguistic-ontological ismorphism, it is argued that an ontological theory compatible with our theory, must reject any sort of spirit, including God."

28.   ———. 1975. "Sommers' Proof That Something Exists." *Notre Dame Journal of Formal Logic* no. 16:298-300.
"In the concluding remarks of [4] I mentioned that in [8] Sommers had given a proof to the effect that necessarily something exists and that later in [5] this proof was shown to be wrong in principle. Sommers' proof went like this:
1. Something is possible.
2. Whatever is not a categorially possible thing is not a possible thing.
3. Suppose there were nothing (i.e., nothing exists).
4. By definition D-things are categorially impossible if and only if nothing is D and nothing is D.
5. For any D, nothing is D and nothing is D. (by 3)
6. For any D, D-things are categorially impossible, (by 4 and 5)
7. For any D, D-things are not possible things, (by 2 and 6)
Since 7 is inconsistent with 1, we must reject 1 or 2 or 3 or 4. 1, 2, and 4 seem certain. Thus we must reject 3. This gives us the negation of 3 (Something exists). Q.E.D.
Guerry attacked Sommers' proof by showing that 4 allows counterexamples and must be rejected rather than 3. What bothered Guerry about 4 was that it allowed Sommers to "derive a necessity (the impossibility of D-things) from a contingency (the nonexistence of D- and D-things)."
Nevertheless, a simple reformulation of this definition (4) can be used to render the proof immune to Guerry's attack. The reformulation is simply what I think Sommers had actually intended by 4. However, this reformulated argument can be shown to be simply invalid requiring Sommers to find a completely new argument for his purposes." (p. 298)
References
[4] Englebretsen, G., "Sommers on empty domains and existence," *Notre Dame Journal of Formal Logic*, vol. XIII (1972), pp. 350-358.
[5] Guerry, H., "Sommers' ontological proof," *Analysis*, vol. 27 (1967), pp. 60-61.
[8] Sommers, F., "Why is there something and not nothing?" *Analysis*, vol. 26 (1966), pp. 177-181.

29.   ————. 1975. "Rescher on E!" *Notre Dame Journal of Formal Logic* no. 16:536-538.
"In "Definitions of 'existence'," *Philosophical Studies,* vol. 7 (1957), pp. 65-69, N. Rescher rejected the definition of 'E!' given by H. S. Leonard in "The Logic of existence", *Philosophical Studies*, vol. 7 (1956) pp. 49-64.
(...)
In this note I will first briefly show that Reseller's reason for rejecting (L) is unsatisfactory. Then I will show that (R2) must be rejected. Finally, I will make some remarks about the general attempt to formalize a definition of existence."

30.   ————. 1975. "Sommers' Theory and Natural Theology." *International Journal for Philosophy of Religion*:111-116.

31.   ————. 1975. "Trivalence and Absurdity." *Philosophical Papers* no. 4:221-227.

32.   ————. 1976. "The Square of Opposition." *Notre Dame Journal of Formal Logic* no. 17:531-541.

33.   ————. 1976. "Sommers' Tree Theory and Possible Things." *Philosophical Studies (Ireland)* no. 24:131-139.

34.   ————. 1978. "Aristotle on the Subject of Predication." *Notre Dame Journal of Formal Logic* no. 19:614-616.
Reprinted in: A. Menne and G. Offenberger (eds.), *Zur Modernen Deutung der Aristotelischen Logik,* vol. II, Hildesheim: Georg Olms, 1985, pp. 128-130.
"Aristotle's thesis that universals must always inhere in a primary substance, a particular, has been used recently as evidence that he, like many contemporary logicians, rejected the predication of terms to universal, i.e., nonsingular, subjects. Yet this would force Aristotle to treat quantifiers as ranging over bare, unsorted, particulars. But Aristotle took the notion of an unsorted particular as nonsense. His thesis about the status of universals can no more serve as evidence that he took all subjects as particulars than can his thesis that every particular satisfies some universal serve as evidence that he took no subjects as particular."

35.   ————. 1979. "Notes on the New Syllogistic." *Logique et Analyse* no. 85-86:111-120.

36.   ————. 1980. "Singular Terms and the Syllogistic." *The New Scholasticism* no. 54:68-74.
"It is generally held that singular terms have no place in Aristotle's syllogistic. A variety of reasons have been given for holding this view. Nevertheless, Aristotle did offer examples of syllogisms containing singular terms. It is suggested here that the reasons for denying singulars a place in syllogistic are unacceptable. Thus, singular terms are on a logical par with general terms.
They can be subject terms (thus be quantified) and they can be predicate terms as well (thus be affirmed or denied of subjects). A proper understanding of how this is so comes only from a clear understanding of Aristotle's theory of logical syntax. Recently F. Sommers has provided a syllogistic logic ("the calculus of terms") which shows, among other things, how singulars can be treated syllogistically."

37.   ————. 1980. "Noncategorical Syllogisms in the *Analytics*." *Notre Dame Journal of Formal Logic* no. 21:602-608.
"It is a commonplace now among logicians that the logic of categorical syllogisms, first developed by Aristotle, presupposes the now-familiar logic of unanalyzed propositions. Aristotle, however, clearly took the syllogistic to be "basic logic", presupposing no other logic. Since he was not unaware of many important principles now constitutive of the calculus of propositions, it can only be argued that either: (i) Aristotle was blind to the import of such principles for formal logic in general, or (ii) he believed such principles could be accounted for by the syllogistic. In spite of the numerous and illustrious supporters of (i), we shall attempt here a brief defense of (ii).

The question, of course, is not whether Aristotle himself substantiated (ii), but rather: can any syllogistic substantiate (ii)? In answering this question affirmatively we will first cite several arguments which are found in the *Analytics*, and which make use of well-known principles of the propositional calculus. We shall then make some historical remarks concerning the attempt to reduce the logic of unanalyzed propositions to the logic of analyzed propositions (the syllogistic). Finally, we hope to show how a recently developed syllogistic system offers a technique which can be used to successfully render the arguments cited from the *Analytics* as categorical syllogisms." (p. 602)

38.   ———. 1980. "On Propositional Form." *Notre Dame Journal of Formal Logic* no. 21:101-120.
Reprinted in: A. Menne and G. Offenberger (eds.), *Zur Modernen Deutung der Aristotelischen Logik*, vol. II, Hildesheim: Georg Olms 1985 pp. 131-140.

39.   ———. 1980. "Denotation and Reference." *Philosophical Studies (Ireland)* no. 27:229-236.

40.   ———. 1980. "A Note on Predication." *Dialogue* no. 19:627-628.
Reply to: Nicholas Griffin, "Do we need predication?", *Dialogue*, 16, 1977, pp. 653-663.

41.   ———. 1980. "Chandler on Change." *Critica* no. 7:81-85.
"Common sense, as Aristotle saw, demands an account of the world which admits both accidental and substantial change. In the first an object ceases to be how-it-is; in the second it ceases to be what-it-is. H. S. Chandler's recent critique of M. Loux's "Substance and attribute" suffers from a misunderstanding of this distinction. Chandler mistakenly concludes from the Aristotle-Loux theory that because an object is necessarily what-it-is, then it is eternally what-it-is."

42.   ———. 1980. "Bryant on Sommers." *Critica* no. 7:87-92.

43.   ———. 1981. "A Journey to Eden: Geach on Aristotle." *Grazer Philosophische Studien* no. 14:133-141.
"Peter Geach has charged Aristotle with the sin of corrupting logic by initiating a process which led to the view that a sentence consists logically of just two names. This charge can only result from a clearly mistaken view of Aristotle's theory of logical syntax. Aristotle, unlike Geach, was careful to distinguish subjects from subject-terms and predicates from predicate-terms.
He took both subjects and predicates as syntactical complexes. Geach, following Frege, holds a very different theory of logical syntax which takes predicates, but not subjects, as syntactically complex."

44.   ———. 1981. *Logical Negation*. Assen: Van Gorcum.
Introduction 1; Some historical remarks 3; Negation in mathematical logic 19; Sommers' term logic 28; The symbolism for a term logic 38; Negation and falsity 47; Concluding remarks on the nature of formal logic 56; Index 61-62.
"This monograph examines the notions of negation found in classical, Stoic, and contemporary mathematical logics and argues that for philosophical purposes, and consonant with ordinary discourse, the notions of predicate denial and term negation (Aristotle's) are to be preferred over the sentential negation now favored. Arguments supporting this atavism are drawn from or based upon the work of F. Sommers. A final result of this investigation is new light on falsity."

45.   ———. 1981. *Three Logicians: Aristotle, Leibniz, and Sommers, and the Syllogistic*. Assen: Van Gorcum.
Preface VII; Introduction 1; *Three logicians*; Aristotle 9; Leibniz 28; Sommers 42; *The syllogistic*; Contemporary mathematical logic 67; Syllogistic logic 77; Concluding remarks 109; Bibliography 113; Index 116-118.
"In his *Introduction to Logical Theory* (London, 1952) P.F. Strawson attempted to show that traditional syllogistic logic was more reflective of various features of ordinary language than was modern mathematical logic. P. Geach, the best modern

critic of traditional logic, responded to Strawson in "Mr. Strawson on Symbolic and Traditional Logic", *Mind,* 72 (1963). His brief remarks there show that Strawson's defense of the old logic is, at best, naive. Geach clearly believes that there just can be no sound defense of traditional logic. He even suggests that those who would persist in their allegiance to the old logic are either irrational or lazy. He says: Many readers will vaguely think Strawson has *proved* that the traditional system with all its faults is philosophically less misleading than the new-fangled one. Those Colleges of Unreason where the pseudo-Aristotelian logic is presented as the only genuine logic, and those lecturers who would like to teach the philosophy of logic without having to learn any modern logic, may well thus have been supplied with a pretext for supine ignorance.
We believe that syllogistic logic is philosophically defensible. What Geach sees as its faults are either not faults at all or can be remedied. The result of applying such remedies is a new syllogistic - a logic which is broader and stronger than Aristotle's original. It is a logic competitive with the "new fangled" logic of today. This new syllogistic was invisaged, but not built, by Leibniz. The hope for such a logic lay dormant during the period when mathematical logic was being born and nurtured through its rapid maturity. But recently that hope has been revitalized, and virtually fulfilled, in the work of F. Sommers. The best general answer to Geach's overall charge is simply a presentation of this new syllogistic.
While the primary motive in presenting this essay is the defense of syllogistic against its modern detractors, we also believe that it is time for a concise introduction to Sommers' logical work. This work is scattered throughout a wide variety of journals and anthologies; and there is now no available account of it. Given the great originality of Sommers' ideas, and the importance of the issues he has chosen to deal with in logic, this void must be filled. Part of this essay is intended as a modest start at that task." (From the Preface).

46.   ———. 1981. "A Further Note on a Proof by Sommers." *Logique et Analyse* no. 94:271-272.

47.   ———. 1981. "On the Terms of Truth." *Philosophical Papers* no. 10:89-92.
"Correspondence theories of truth require a special relation between sentences and the world.
Relying on suggestions first made by Leibniz, and later expanded by Sommers, it can be shown that the relation called for is simply that of denotation. Since denotation is primarily a relation between a term and things, sentences must be construed as terms. The things denoted by sentences are (pace Sommers) states of affairs."

48.   ———. 1981. "Predicates, Predicables and Names." *Critica* no. 8:105-108.
"It is a canon of modern predicate logic that general terms are predicates and subjects are singular. Traditional logic, by contrast, took all terms to be fit for either the subject or predicate roles. The thesis, recently defended by T. Burge, that names are predicates amounts (once the prejudices of modern logic are abandoned) to the much weaker claim that names can be used as general terms."

49.   ———. 1981. "A Note on Identity, Reference and Logical Form." *Critica* no. 8:75-81.

50.   ———. 1982. "Do We Need Relative Identity?" *Notre Dame Journal of Formal Logic* no. 23:91-93.

51.   ———. 1982. "Aristotle and Quine on the Basic Combination." *The New Scholasticism* no. 56:244-249.
"Quine's 'basic combination' is a sentence joining a singular to a general term. The position as the singular is referential -- that of the general is predicational. Singulars and generals are unfit for each other's position. This contrasts with Aristotle's view, which takes such sentences to join a subject and a predicate. A subject is a quantified term -- a predicate is a qualified term. Yet the terms themselves are syntactically homogeneous -- fit for each other's position. One motive behind the

Quinean view is the belief that: (i) subjects refer, (ii) singular refer to individuals, (iii) universals cannot be referred to. So, since generals cannot refer without referring to universals, generals are unfit for subjects. the Aristotelian account of logical syntax also avoids Platonic consequences, but not at the cost of an unsupported singular/general distinction."

52.   ———. 1982. "Aristotle on the Oblique." *Philosophical Studies* no. 29:89-101.

53.   ———. 1982. "Leibniz on Logical Syntax." *Studia Leibnitiana* no. 14:119-126.

54.   ———. 1982. "Natural Syntax, Logical Syntax and Translation." *Australian Logic Teachers Journal* no. 6:8-14.

55.   ———. 1982. "What in the World is the Truth About Logical Space?" *Philosophical Inquiry* no. 4:52-61.

56.   ———. 1982. "Predication Old and New." *Critica* no. 14:117-120.

57.   ———. 1983. "Presupposition and Existence." *Philosophical Papers* no. 12:1-8.

58.   ———. 1983. "Presumptions of Reference." *Philosophical Papers* no. 12:9-11.

59.   ———. 1983. "Reference, Anaphora and Singular Quantity." *Dialogos* no. 41:67-72.

60.   ———. 1984. "Opposition." *Notre Dame Journal of Formal Logic* no. 25:79-85.

61.   ———. 1984. "Quadratum Auctum." *Notre Dame Journal of Formal Logic* no. 107:309-325.
Reprinted in: George Englebretsen (ed.), *Essays on the Philosophy of Fred Sommers*, Lewiston: Edwin Mellen Press 1990, pp. 133-147.

62.   ———. 1984. "Feldman and Sommers on Leibniz's Law." *Dialogos* no. 43:91-96.
"Following suggestions made recently by F. Sommers it can be shown that Leibniz's law is in fact a principle of term substitutability. Terms are the same if and only if they are intersubstitutable for one another. More importantly for Leibniz's general program for syllogistic is the fact that this principle is but a special case of the *dictum de omni*."

63.   ———. 1984. "Logical Structure and Natural Syntax." *Journal of Social and Biological Structures* no. 7:219-234.

64.   ———. 1984. "Syntactical Complexity." *Philosophical Inquiry* no. 6:119-126.

65.   ———. 1984. "Notes on Quine's Syntactical Insights." *Grazer Philosophische Studien* no. 22:149-157.

66.   ———. 1984. "Anselm's Second Argument." *Sophia* no. 23:34-37.

67.   ———. 1984. "Freeman on Induction/Deduction." *Informal Logic* no. 6:26-27.

68.   ———. 1984. "Logical Form and Natural Syntax." *Indian Philosophical Quarterly* no. 11:229-254.

69.   ———. 1985. "Geach on Logical Syntax." *The New Scholasticism* no. 59:177-184.

70.   ———. 1985. "On the Proper Treatment of Negative Names." *Journal of Critical Analysis* no. 8:109-115.

71.   ———. 1985. "Negative Names." *Philosophia* no. 15:133-136.
"E. M. Zemach's otherwise superb defense of the formal symmetry of names and general terms includes a mistaken view about the nature of negated names. While agreeing with his symmetry thesis I argue that he fails to appreciate (1) that the referents of negated names are not logically impossible, and (2) that the negation of a name is not a name."

72.   ———. 1985. "Defending Distribution." *Dialogos* no. 45:157-159.
"At least one recent defender of the doctrine of distribution has conceded too much to the opposition. Friends of distribution must recognize the crucial distinction

between denotation, a semantic feature of all terms, and reference, a semantic feature of quantified expressions. They must also be prepared to apply their doctrine to every kind of term -- including relationals."

73.　　———. 1985. "Quine on Aristotle on Identity." *Critica* no. 17:65-68.

74.　　———. 1985. "Zur philosophischen Interpretation der Logik: ein weiter aristotelischen Dialog." In *Zur Modernen Deutung der Aristotelischen Logik. Vol. II*, edited by Menne, Albert and Öffenberger, Niels, 112-127. Hildesheim: Georg Olms.

75.　　———. 1985. "Logical Primitives." *Indian Philosophical Quarterly* no. 12:371-380.

76.　　———. 1985. "Semantic Considerations for Sommers' Logic." *Philosophy Research Archives* no. 11:281-318.
"During the last twenty-five years Fred Sommers has developed a series of inter-related theories of language structure, ontological structure, logical syntax, and truth. Each theory has naturally contained valuable suggestions concerning semantic issues. But Sommers has not yet offered a specifically semantic theory. I attempt here to fill that gap by sketching a theory of semantics based upon his logical theses. The theory holds that terms, as used in statement making sentences, have both denotation and signification. Terms denote objects and signify properties. Terms, when quantified, refer to some or all of their denotations, and, when quantified, characterize the subjects to which they are predicated as having or lacking the properties they signify. The semantic, syntactic, and ontological theses presented in this theory are contrasted with those found in classical, Scholastic, Leibnizian, Fregean, and Quinean theories."

77.　　———. 1986. "On Some Alleged Semantic Correlations." *The New Scholasticism* no. 60:490-500.
"The Fregean replacement of the subject/predicate distinction with the argument/function distinction led to an emphasis on the singular/general distinction for logic. Only singulars could be subjects; only general terms could be predicates. Singulars refer; predicates are true of Ultimately the Fregean syntactic distinction is semantic. The old subject/predicate is not. A semantic theory based on the old logic of subjects and predicates can allow the semantic, syntactic and ontological distinctions their proper places."

78.　　———. 1986. "Singular / General." *Notre Dame Journal of Formal Logic* no. 27:104-107.
"Modern logic takes the difference between singular and general terms very seriously. It insists that sentences with general subjects have a much more complex logical syntax than sentences with singular subjects.
This is partly because modern logic always treats general terms as predicates and never treats singular terms as anything but subjects. The insistence that the logic of singulars is different from the logic of general propositions is also partly due to modern logic's demand that the logical form of any sentence be a reflection of its truth conditions. 'Socrates is wise' is true just in case Socrates is wise. But 'Some philosopher is wise' is true just in case there is at least one thing which is such that it is a philosopher and it is wise. So the modern logician requires a great deal of semantic information to be reflected in syntax. But how does a logician decide how much semantic information should be so reflected? Surely not all. There's just too much. Just that which determines truth? 'John is a bachelor' has as one of its (necessary) truth conditions that John is a male. Yet the modern logician does not require this bit of semantic information to be revealed syntactically."

79.　　———. 1986. "Czezowski on Wild Quantity." *Notre Dame Journal of Formal Logic* no. 27:62-65.
"It is well known that if singular sentences are to be fully incorporated into a syllogistic logic, singular subjects must be quantified. Leibniz argued that such subjects are both universal and particular. Similar (but not identical) views have

been advanced in this century by Copi, Sommers and Czezowski. but the latter has argued that singular quantity is unique, distinct from the two classical quantities. it is shown here that this is an illusion."

80.   ———. 1986. "A Note on Truth and Existence in Leibniz." *Manuscrito.Revista Internacional de Filosofia* no. 9:7-9.
"Leibniz was able to connect the notion of truth for a sentence with the idea of existence for individuals. Words and sentences are taken to both denote individuals and signify concepts. iI a true sentence two conditions must hold. The concept signified by the subject and the word denoted by the sentence must be the actual word."

81.   ———, ed. 1987. *The New Syllogistic*. New York: Peter Lang.
Preface IX; Introduction 1; 1. The calculus of terms by Fred Sommers p. 11 (reprinted from *Mind,* 89, (1970); 2. De Morgan and Sommers by Peter Swiggart p. 57; 3. Back to Leibniz or on from Frege? by B. H. Slater p. 87; 4. Review: *The logic of natural language* by Peter Frederick Strawson p. 99 (reprinted from *The Journal of Philosophy*, 79, (1982); 5. On the semantics of Sommers' 'Some *S*' p. 105 by Richard M. Martin p. 105 (reprinted from *Mind, modality, meaning and method* (1983); 6. Sommers and modern logic by John Bacon p. 121; 7. Proofs and pronouns: extending the system by Michael Lockwood p. 161; 8. Algebraic rules for syllogisms and antilogisms by W. H. Friedman p. 213; 9. The two term theory of predication by Aris Noah p. 223; 10. Natural syntax and Sommers' theory of logical form by George Englebretsen p. 245; 11. Some practical and theoretical features of Sommers' cancellation method by Richard Purtill p. 273; 12. Some problems with TFL [Traditional Formal Logic] by Charles Sayward p. 283; 13. Truth and existence by Fred Sommers p. 299; 14. Logical polarity by George Englebretsen p. 305; Notes on the contributors p. 313; Bibliography p. 315-322.
"This anthology brings together Essays by F. Sommers, his defenders and critics concerning his new system of logic based on a traditional logical syntax (the "new syllogistic"). The Essays include presentations of the logic, explorations of some of its historical antecedents, examinations of the symbolic algorithm which accompanies it, and discussions of such key topics as pronominalization, truth, syllogistic inference, existence and term-negation."

82.   ———. 1987. "Subjects." *Studia Leibnitiana* no. 19:85-90.

83.   ———. 1987. "Natural Syntax and Sommers' Theory of Logical Form." In *The New Syllogistic*, edited by Englebretsen, George, 245-272. New York: Peter Lang.
"F. Sommers has challenged the Fregean theory of logical syntax. In particular, he has denied the idea that natural language has no logic. It is possible to articulate a theory of logical syntax for natural language. it construes sentences as concatenations of subjects and predicates. A subject is a quantifier plus a term; a predicate is a qualifier plus a term. Surprisingly, such an analysis accounts not only for categoricals but singulars, identities, rationals and truth-functions."

84.   ———. 1987. "Logical Polarity." In *The New Syllogistic*, edited by Englebretsen, George, 305-311. New York: Peter Lang.
"Both statements and terms can be negated. They come in positively/negatively charged pairs. This polarity is reversible for terms (for any negative term a semantically equivalent positive can be defined) but not for statements. An account of why this is so is offered here."

85.   ———. 1987. "Morris on Identity." *Analysis* no. 47:92-93.

86.   ———. 1987. "Truth and Existence." In *The New Syllogistic*, edited by Englebretsen, George, 299-304. New York: Peter Lang.

87.   ———. 1988. "Preliminary Notes on a New Modal Syllogistic." *Notre Dame Journal of Formal Logic* no. 29:381-395.
Abstract: "This article consists of five parts. In Section 1 we introduce the topic of modal syllogistic by examining the case of the two Barbaras found in *Prior*

Analytics.

In the second section we briefly review certain aspects of the "new syllogistic" developed in recent years by Fred Sommers. The next two sections examine some of the syntactic and semantic features of modal sentences *de dicto* and *de re* respectively. Our final section presents a preliminary sketch of what a syllogistic admitting both *de dicto* and *de re* modality would look like."

88. ———. 1988. "A Note on Leibniz's Wild Quantity Thesis." *Studia Leibnitiana* no. 20:87-89.

89. ———. 1988. "La théorie des catégories de Sommers: une nouvelle introduction." *Dialogue* no. 27:451-473.

90. ———. 1989. "Formatives." *Notre Dame Journal of Formal Logic* no. 30:382-389.
Abstract: "An answer to the question of 'sentential unity' (What makes a sentence a single linguistic unit rather than just a string of words?) is one of the goals of any theory of logical syntax. A 'Fregean' theory claims that a sentence is a function (unsaturated expression, containing gaps) whose gaps are filled with either arguments (saturated, gap-less) or other functions which have already been saturated. A 'Leibnizian' theory construes a sentence as a syntactically complex subject (quantified term) plus a syntactically complex predicate (qualified term). Subjects and predicates just naturally fit one another to form sentences. An 'Aristotelian' theory takes a sentence to consist of a pair of terms connected by a binary formative expression (functor), whose only role is to connect terms to form more complex expressions (e.g., sentences). After an examination of the formal nature of such functors, it is argued that this third sort of theory not only answers better the question of sentential unity, but it also provides a better account of the nature of logical constants in general."

91. ———. 1990. *Essays on the Philosophy of Fred Sommers: In Logical Terms*. Lewiston: Edwin Mellen Press.
Contents;
Foreword by Graeme Hunter I; Introduction III; I. A reintroduction to Sommers' tree theory 1; II. Sommers on the subject of a sentence 33; III. On the philosophical interpretation of logic: another Aristotelian dialogue 43; IV. A introduction to (a Sommers-like) logic 63; V. Remarks on the semantics of terms and sentences 109; VI. Qadratum auctum 133; VII. On the logic of phrasal conjunctions 151; VIII. Compound terms 159; IX. Preliminary notes on a new modal syllogistic 169; X. Existing things 189; XI. A brief note on psychologism 197; Bibliography 205; Index of names 229; Index of terms 233.

92. ———. 1990. "A note on Copula and Qualifiers." *Linguistic Analysis* no. 20:82-86.

93. ———. 1990. "Cartesian Syntax." *Philosophical Inquiry* no. 12:59-64.
"The "Cartesian" theory of logical syntax was most fully formulated by the Port-Royal logicians. A brief survey of their work, especially the Logique, shows that they took a statement to have a deep structure analyzable as a predication. It is a joining or separating of two terms by a positive or negative copula. Complex terms were also viewed as (implicit) predication. The logical syntax of predication requires no recourse to semantic distinctions among terms, nor does it distinguish atomic from molecular statements."

94. ———. 1990. "The Myth of Modern Logic." *Cogito* no. 4:150-158.

95. ———. 1992. "Linear Diagrams for Syllogisms (with Relationals)." *Notre Dame Journal of Formal Logic* no. 33:37-69.
"A system for diagramming syllogisms is developed here. Unlike Venn, and other planar diagrams, these diagrams are linear. This allows one to diagram inferences which exceed the virtual four term limit onnonlinear systems. It also can be extended (by the use of vectors) to inferences involving all kinds of relational expressions."

96.   ———. 1992. "An Algebra for Logic." *Canadian Journal of Rethorical Studies* no. 2:104-140.

97.   ———. 1992. "Plus and Minus." *Critica* no. 24:73-116.

98.   ———. 1992. "Laying the Cards on the Table: Negation Theory and Contradiction." *Linguistic Analysis* no. 22:96-99.

99.   ———. 1994. "A Propos of Nothing." *Linguistic Analysis* no. 24:32-38.

100.   ———. 1996. *Something to Reckon With: The Logic of Terms*. Ottawa: Ottawa University Press.
With a foreword by Fred Sommers; Preface; Introduction 1; 1. The good old days of the bad old logic (or, Adam's Fall); Aristotle's syllogistic 9; Scholastic additions 16; Cartesian interlude 23; Leibnizian insights 30; Nineteenth-century algebraists 41; 2. A modern success Story (or, Frege to the rescue); Frege 53; Bradley and Ramsey raise some doubts 64; Russell and Wittgenstein 69; Strawson, Geach, and Quine 78; 3. Coming to terms with Sommers 99; The Calculus of Terms 99; The logic of natural language 122; The truth 135; The laws of thought 142; 4. It all adds up 149; Plus/Minus 149; Truth and what 'there' is 185; A new system of diagrams 188; Conclusion 239; Bibliography 243; Index of names 269-274.

101.   ———. 1997. "The Unifying Copula." *Logique et Analyse* no. 159:255-259.

102.   ———. 1997. "Religious Discourse and Sommers' Theory of Truth: A Response to Hans H. Penner." *Method and Theory in the Study of Religion* no. 9:249-258.

103.   ———. 1998. *Line Diagrams for Logic: Drawing Conclusions*. Lewiston: Edwin Mellen Press.
Preface; Introduction 1; I. Reasoning with diagrams 7; II. Syntax and diagrams 13; III. A word about truth 17; IV. Diagramming categoricals and singulars 19; V. Compound terms and negative names 29; VI. Compound names 37; VII. Syllogistic inference 41; VIII. Relationals 47; IX. Reflexive and personal pronouns; 57; X. The dictum de omni 63; XI. Statement logic as a special part of term logic 67; XII. Diagramming unanalyzed statements 77; XIII. Final remarks 85; Appendix 87; References 99-105

104.   ———. 2000. "Preliminaries for a Term-Functor Logic." In *Variable-Free Semantics*, edited by Böttner, M. and Thümmel, W., 90-99. Osnabrück: Secolo-Verlag.

105.   ———. 2000. "Two Important Logical Insights by Lewis Carroll." In *Reflections on Lewis Carroll*, edited by Soto, Fernando J. Shelburne: The Lewis Carroll Society of Canada.

106.   ———. 2002. "Syllogistic: Old Wine in New Bottles." *History and Philosophy of Logic* no. 23:31-35.
"In the late nineteenth century there were two very active lines of research in the field of formal logic. First, logicians (mostly in English-speaking countries) were engaged in formulating a generally traditional logic as an algebra, a part of mathematics; second, logicians (mostly on the Continent) were busy building a non-traditional logic that could serve, not as a part of, but as the foundation of, mathematics. By the end of the First World War the former line had been pretty well abandoned while the second continued to expand. However, that old abandoned line, stretching from Aristotle, through the Scholastics and then Leibniz to the nineteenth century algebraists, had not been completely forgotten. One of those logicians who has recently worked on the restoration (and, importantly, the extension) of that line is Fred Sommers. His Term Logic preserves a number of traditional insights (especially involving the theory of logical syntax), while also enjoying a power to account for formal inference at least comparable to that of the standard logic now in place."

107.   ———. 2004. "Predicate Logic, Predicates, and Terms." In *First-Order Logic Revisited*, edited by Hendricks, Vincent, Neuhaus, Fabian, Pedersen, Stig Andur,

Scheffler, Uwe and Wansing, Heinrich, 75-88. Berlin: Logos Verlag.

Abstract: "My primary aim here is to introduce in a very preliminary way a system of formal logic that has been built by Fred Sommers and myself over the past few years. This term logic matches the inferential power of the standard first-order predicate logic, but enjoys certain advantages in terms of simplicity and naturalness. What I hope this can offer is some insight into ideas concerning formal logic that are extremely old but not often encountered today. I may rightly be accused of atavism for touting such antiques, but perhaps the contrast between these ideas and more contemporary ones will be of interest. So, some of my remarks will concern some central logical concepts (especially the concept of predication), while others will be a bit historical."

108.   ———. 2005. "Trees, Terms, and Truth: The Philosophy of Fred Sommers." In *The Old New Logic. Essays on the Philosophy of Fred Sommers*, edited by Oderberg, David S., 25-48. Cambridge: The MIT Press.

"During the past fifty years Fred Sommers has developed bold and original ideas concerning the sense structure of natural language and how it reveals ontological structure, a powerful and fully expressive version of term logic, and a revitalized theory of truth by correspondence. This essay shows how all these ideas are mutually related to one another. Together they amount to a unified, coherent theory of mind, language and the world. Sommers's work in these areas has influenced research in philosophy of language, logic, and cognitive psychology."

109.   ———. 2006. *Bare Facts and Naked Truths: A New Correspondence Theory of Truth*. Aldershot: Ashgate.

Contents: Preface IX. Part One: Introduction; 1. À la recherche du temps perdu 9; 2. The big MAC attack 37; Part Two: 3. Terminism 79; 4. Facing the facts 1070; 5. Giving the world Its due 141; 6. A nice derangement 153; Conclusion 167; Bibliography 171; Index 189.

"The aim of the present essay is to outline a theory about truth. Since a number of concepts are involved in the concept of truth this means that I shall has to offer clarification, of one sort or another, of a large number of concepts and conceptual clusters. Some of these involve what there is, existence, reality, and the like (so my project is partly metaphysical); some involve knowledge, belief, perception, and so forth (so my project is partly epistemological); others involve sentences, terms, propositions, statements, saying, and so on (so part of my project is in the philosophy of language -- semantics). To illustrate briefly what I've been saying, consider some of the semantic concepts with which we shall be dealing. The terms of art needed to talk about such things as sentences, statements, facts, stating, saying, and what is stated are all plagued by ambiguity (and much else besides). To disambiguate them, trace out their different senses, is to analyze the multiple concepts they can express. Thus a sentence might be either a sentence-type or a sentence-token; a statement might be either a sentence or what is expressed by a sentence; a fact might be either a true sentence, a true statement, a truth expressed by a sentence (or by a statement), or what makes something (a sentence, statement, and so on) true; to state might be to utter, to express, to signify, or to do something else; to say might be to utter or to state; what is stated might be a sentence, a fact, or something else. So here we have just a portion of a large cluster of concepts that is implicated in any account of truth and is in serious need of clarification, analysis, disentanglement -- and I have yet to focus on the concept of a concept. An appropriate way to make progress here is to try to formulate a detailed, specific theory of truth. Along the way, the clarification of various concepts will help push along the development of the theory. Reciprocally, the theory, as it gets formulated, will help shed light on various key concepts and at least show the way to the clarification of others."

110.   ———, ed. 2008. *Numerical Term Logic, by Lorne Szabolcsi*. Lewiston: Edwin Mellen Press.

111. ————. 2008. "The Dodo and the DO: Lewis Carroll on the *Dictum de Omni*." *Proceedings of the Canadian Society for History and Philosophy of Mathematics* no. 20:142-148.
Reprinted in: *The Carrollian: The Lewis Carroll Journal,* 25 (2014), pp. 29-37.

112. ————. 2010. "Making Sense of Truth-Makers." *Topoi* no. 29:147-151.

113. ————. 2012. *Robust Reality: An Essay in Formal Ontology*. Frankfurt: Ontos Verlag.
"Because I owe so much to Fred Sommers, I offer the present book as a feeble attempt to fulfill his wish to provide a full account of the tree theory, of the structure of language, its relation to ontology, and the many fruits that can be harvested from it - especially when watered by logic and ripened in the sunlight of truth." (p. XIII).
"In this essay, we have examined systems of formal ontology hinted at by Aristotle, attempted by Ryle, and one fully articulated by Sommers. Each took some formal aspect of language to provide a guide to the formal structure of the ontology. More particularly, each concentrated on semantic relations as key to that structure. This contrasts with more recent theories that take the syntactic forms dictated by modern mathematical logic as the proper guide to ontology. Sommers' semantic-ontological tree theory proved fruitful. For example, it highlighted the fact that term ambiguity, which requires different senses of a term to have different locations on the language tree, is most commonly the result of following rules - rules that "enforce ambiguity" on some terms. Moreover, the theory permitted a rational way to look at the order in which various rules governing language apply - "levels of rectitude".
Given the isomorphism of sense structures for the terms of ordinary language and the inclusion relations among categories of things, the notion of levels of rectitude could be extended to rules governing ontology as well. The key notion of spanning, which holds or fails to hold between a (sense of a) term and thing, helps enrich our understanding of how things can constitute not only sets but categories and types. In examining the tree theory, with its focus on terms, one can't help noting that much depends on the idea that predication is essentially a relation between a predicable term and another term, which is also predicable. It was this idea, that statements could be parsed as pairs of terms standing in the relation of predication, that led Aristotle away from the view that statements consist of names and verbs. Giving up that grammar-based view freed Aristotle to view statements as consisting of pairs of terms joined together by a logical copula doing the work of predication. Only then was he able to develop formal logic, a term logic, the syllogistic." (pp. 143-144).

114. ————. 2015. *Exploring Topics in the History and Philosophy of Logic*. Berlin: Walter de Gruyter.

115. ————. 2016. "Fred Sommers' Contributions to Formal Logic." *History and Philosophy of Logic* no. 37:269-291.
Abstract: "Fred Sommers passed away in October of 2014 in his 92nd year. Having begun his teaching at Columbia University, he eventually became the Harry A. Wolfson Chair in Philosophy at Brandeis University, where he taught from 1963 to 1993. During his long and productive career, Sommers authored or co-authored over 50 books, articles, reviews, etc., presenting his ideas on numerous occasions throughout North America and Europe. His work was characterized by a commitment (often implicit) to the preservation and application of historical insights and to the value of a well-articulated, coherent logical system. He was recognized for his independence and refusal to accept any view on the basis of authority alone. This made him a formidable critic but accounted in part for his many innovative and original ideas. In spite of his general contrariness in logic, Sommers earned the respect of the majority of his contemporaries, including Russell, Quine, van Benthem, Hacking, Suppes, and Strawson. In 2005, he was the subject of a *Festschrift* with contributions by a number of younger philosophers and logicians, just one indication of the continuing importance and influence of his work."

116. ———. 2016. "La Quadrature du Carré." In *Soyons Logiques / Let's be Logical*, edited by F. Schang, A. Moktefi, et A. Moretti, Moktefi, Amirouche, Moretti, Alessio and Schang, Fabien, 44-59. London: College Publications.

117. ———. 2016. "What Did Carroll Think the Tortoise Said to Achilles?" *The Carrollian: The Lewis Carroll Journal* no. 28:76-83.

118. ———. 2019. *Figuring It Out: Logic Diagrams*. Berlin: Walter de Gruyter.

119. Englebretsen, George, and Sayward, Charles. 2011. *Philosophical Logic: An Introduction to Advanced Topics*. New York: Continuum.
Co-author Charles Sayward.
Contents: List of Symbols X; 1. Introduction 1; 2. Sentential Logic 13; 3. Quantificational Logic 52; 4. Sententia Modal Logic 74; 5. Quantification and Modality 93; 6. Set Theory 103; 7. Incompleteness 130; 8. An Introduction to Term Logic 139; 9. The Elements of a Modal term Logic 166; References 176; Rules, Axioms, and Principles 177; Glossary 184; Index 195-198.
"Post-Fregean mathematical logic began with a concern for foundational issues in mathematics. However, by the 1930s philosophers had not only contributed to the building and refinement of various formal systems, but they had also begun an exploitation of them for primarily philosophical ends. While many schools of philosophy today eschew any kind of technical, logical work, an ability to use (or at least a familiarity with) the tools provided by formal logic systems is still taken as essential by most of those who consider themselves analytic philosophers. Moreover, recent years have witnessed a growing interest in formal logic among philosophers who stand on friendly terms with computer theory, cognitive psychology, game theory, linguistics, economics, law, and so on. At the same time, techniques developed in formal logic continue to shed light on both traditional and contemporary issues in epistemology, metaphysics, philosophy of mind, philosophy of science, philosophy of language, and so forth.
In what follows, students who have already learned something of classical mathematical logic are introduced to some other ways of doing formal logic: classical logic rests on the concepts of truth and falsity, whereas constructivists logic accounts for inference in terms of defense and refutation; classical logic usually makes use of a semantic theory based on models, whereas the alternative introduced here is based on the idea of truth sets; classical logic tends to interpret quantification objectually, whereas this alternative allows for a substitutional interpretation of quantifiers. As well, a radically different approach, fundamentally different from any version of mathematical logic, is also introduced. It is one that harkens back to the earliest stages in the history of formal logic but is equipped with the resources demanded of any formal logic today." (pp. 1-2)

120. Sommers, Fred, and Englebretsen, George. 2000. *An Invitation to Formal Reasoning. The Logic of Terms*. Aldershot: Ashgate.
Preface X; 1. Reasoning 1; 2. Picturing propositions 25; 3. The language of logic (I) 49; 4. The language of logic (II) 77; 5. Syllogistic 109; 6. Relational syllogistic 139; 7. Statement logic 163; 8. Modern predicate logic 213; Rules, laws and principles 253; A note on further reading 259-260.
The book "introduces the discipline of formal logic by means of a powerful new system formulated by Fred Sommers.
This system, term logic, is different in a number of ways from the standard system employed in modern logic; most striking is, its greater simplicity and naturalness. Based on a radically different theory of logical syntax than the one Frege used when initiating modern mathematical logic in the 19th Century, term logic borrows insights from Aristotle's syllogistic, Scholastic logicians, Leibniz, and the 19th century British algebraists.
Term logic takes its syntax directly from natural language, construing statements as combinations of pairs of terms, where complex terms are taken to have the same syntax as statements. Whereas standard logic requires extensive 'translation' from natural language to symbolic language, term logic requires only 'transcription' into

the symbolic language. Its naturalness is the result of its ability to stay close to the forms of sentences usually found in every day discourse. Written by the founders of the term logic approach, An Invitation to Formal Reasoning is a unique introduction and exploration of this new system, offering numerous exercises and examples throughout the text. Summarising the standard system of mathematical logic to set term logic in context, and showing how the two systems compare, this book presents an alternative approach to standard modern logic for those studying formal logic, philosophy of language or computer theory."