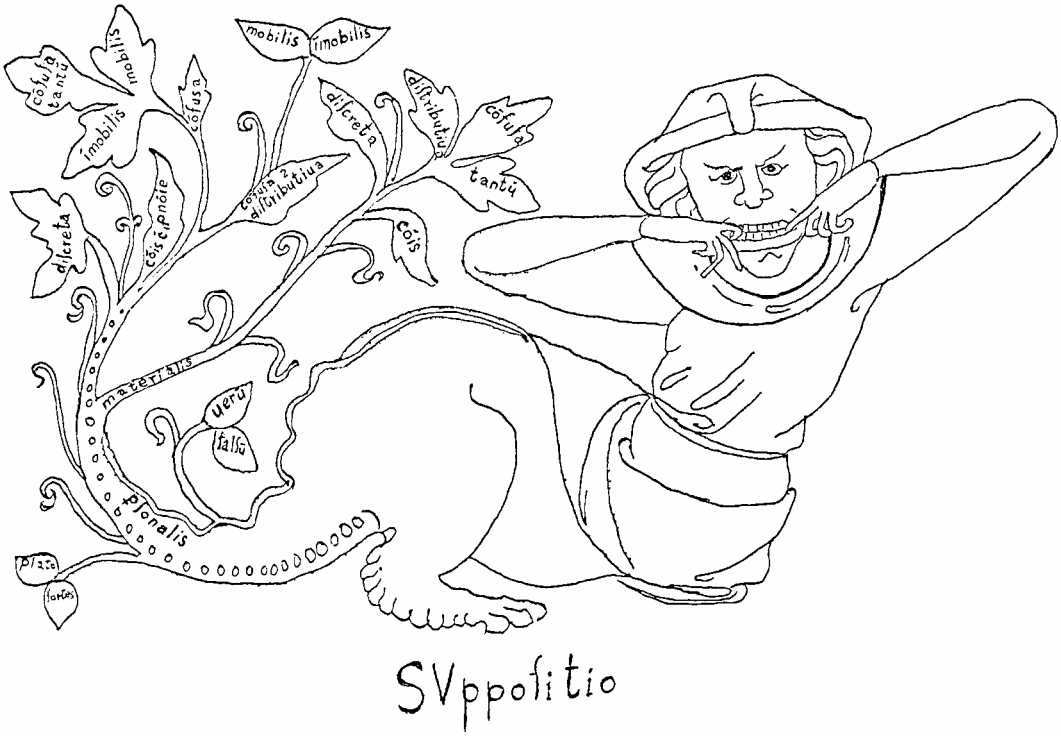
Thoughts, Words and Things: An Introduction to Late Mediaeval Logic and Semantic Theory

Paul Vincent Spade



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The "dragon" that graces the cover of this volume has a story that goes with it. In the summer of 1980, I was on the teaching staff of the Summer Institute on Medieval Philosophy held at Cornell University under the direction of Norman Kretzmann and the auspices of the Council for Philosophical Studies and the National Endowment for the Humanities. While I was giving a series of lectures there (lectures that contribute to this volume, as it turns out), I went to my office one morning, and there under the door some anonymous wag from the Institute had slid the pen and ink drawing you see in the picture. It represents "Supposition" as a dragon, making a rude face at the viewer. The tail of the dragon is divided — not entirely accurately, as it turns out — into the various branches and subbranches of supposition. If the details are not altogether correct, the spirit is certainly understandable.

A few years ago, I discovered that the anonymous artist was not altogether as original as I had at first supposed. While glancing one day — don't ask why — through the charming *A Coloring Book of the Middle Ages* (San Francisco, Cal.: Bellerophon Books, 1969), I turned a page and was startled to find this very creature leering out at me! The inscriptions in the tail and at the bottom were not there, but otherwise it was the same creature! A note at the top of the page said "From the Treatise of Walter de Milemete, *De Nobilitatibus Sapientiis et prudentiis Regum,* Oxford, Christ Church Library, MS. E. 11 about 1326–27."

I confess I had never heard of Walter or his book, but of course I couldn't leave it at that. After some detective work in the library, I found a very informative description of the manuscript in Lucy Freeman Sandler, *Gothic Manuscripts 1285–1385,* ("A Survey of Manuscripts Illuminated in the British Isles"; Oxford: Oxford University Press, 1986), volume II: *Catalogue,* pp. 91–93. It turns out that the manuscript is now identified as: Oxford, Christ Church MS 92. Master Walter of Milemete (fl. 1326–73), it seems, was King's Clerk and afterwards Fellow of King's Hall, Cambridge. His book, of which this manuscript is the unique copy, was designed to instruct "the soverign on his varied responsibilities in relation to religion, government, learning, administration, entertainment, financing of armies, and on the moral virtues appropriate to his kind" (Sandler, p. 91). Here is some more of Sandler's discussion (pp. 91–92):

> Milemete wrote his book as an offering to Edward III at the end of 1326, after the deposition but before the murder of Edward II in 1327. It was intended as a companion volume to the copy of Pseudo-Aristotle's *De secretis secretorum* …, which Milemete had also prepared for Edward III. [Note: Sandler also describes this manuscript in her immediately following entry. It survives as London, British Library MS Add. 476].
>
> An ambitious project, the text … is dominated by the decorative borders, crammed with heraldry, contorted hybrids, … combats between man and man, man and best, half-man and half-beast, human monstrosities, *e.g.* the courting wildman and wildwoman …, the axe-bearing dwarf …, hunting scenes, and tournaments.

By a stroke of good fortune, it happens that the manuscript was actually published in 1913 in a limited-edition monochrome reproduction by Montague Rhodes James (well known to all searchers of manuscript catalogues). Here are the particulars: *The Treatise of Walter de Milemete De nobilitatibus, sapientiis, et prudentiis regum Reproduced in Facsimile from the Unique Manuscript Preserved at Christ Church, Oxford, together with a Selection of Pages from the Companion Manuscript of the Treatise De secretis secretorum Aristotelis, Preserved in the Library of the Earl of Leicester at Holkham Hall,* [Oxford:] Printed for the Roxburghe Club [at the University Press, by H. Hart], 1913. M. R. James included a long and detailed description in an introduction to the volume.

Apparently this limited edition was distributed only to then members of the Roxburghe Club. There is list of members included in the preliminary matter in the volume, and each member's copy has his name printed in red in that list. It turns out that the Lilly Library at Indiana University (our rare-book library) has the copy produced for a certain Michael Tomkinson, Esq. And, sure enough, there on fol. 31^{v} (p. 62), in the lower left corner, is our grinning monster. It appears in Ch. 7 (*De regis gratitudine*) of the treatise.

Just to head off potentially awkward legal questions of copyright, I hasten to add that the "supposition dragon" that was slipped under my door and that graces th volume is *not* simply a marked-up xerographic copy of the sketch that appears in *A Coloring Book of the Middle Ages.* The latter's jaws are slightly open, for instance, so that the upper teeth do not quite meet the lower ones; my dragon has his teeth clenched. No, although my dragon was obviously inspired by the *Coloring Book,* it was drawn separately. Again, there are veins in the tail of the *Coloring Book's* sketch, whereas my dragon lacks them (to make room for the writing). Again, neither sketch shows the shadings and the backgroun pattern visible in the Roxburghe Club's printed volume.

I have absolutely no idea about the identity of the anonymous artist who was inspired to apply this drawing to supposition theory, but I have the original framed on the wall in my office.

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Chapter 1: Introduction

This book is the product of a graduate-level course I have taught during the Fall semesters of 1972, 1976, 1987, 1991, and 1996, and will teach again during the fall of 2002, and of a series of eleven lectures I presented as a member of the faculty of the Institute on Medieval[1] Philosophy held during the summer of 1980 at Cornell University.[2] Things have reached the point where there's no good purpose to be served by reading stale old lecture notes to students, when they can read them for themselves and we can go on to do other things in class. So here they are, for your edification and amusement.

A. Scope of This Book

The purpose of this book, as its subtitle says, is to introduce readers to late mediaeval logic and semantic theory. By "late mediaeval," I do not mean the *really* late period, at the end of the fifteenth century, say. Rather I mean the fourteenth century, primarily, and only the first half of it at that. (That is "late" in comparison with Boethius, certainly, and even in comparison with Peter of Spain and William of Sherwood a century earlier.) This is the period on which I have concentrated the bulk of my research, so naturally it's the period I'm best in a position to talk about. Nevertheless, to give the reader a running start, I have included a kind of overview in Ch. 2, below, of the history of logic up to the end of the Middle Ages, including the periods before and after the time we will be mainly focusing on.

I emphasize that this book is an *introduction* to the topic. It makes no claim to be — and in any case isn't — an exhaustive study. I have concentrated on the crucial semantic notions of signification and supposition, and on the interaction of those notions with the theories of mental language and connotation. The result, I think, is a more or less self-contained package of material that is absolutely essential to any further work in late mediaeval logic and semantic theory.

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[1] You might as well get used to it. I myself spell it 'mediaeval', with the extra 'a'. But I will stoop to using the other, vulgar spelling if I am quoting or citing someone who insists on doing it that way.

[2] The Institute was directed by Norman Kretzmann and sponsored by the Council for Philosophical Studies and the National Endowment for the Humanities.

Just so you will know, let me indicate some of things this book does *not* discuss in detail. Most conspicuous, perhaps, is the lack of any serious discussion of the theory of consequence. A lot of work was done on that notion in the Middle Ages, and much has been written about it in the secondary literature. But you will have to go elsewhere for a study of it; I treat it here only in passing.

Again, although I have devoted far too much of my life to the mediaeval *insolubilia*- and *obligationes*-literatures, you will find them scarcely mentioned here; they are more specialized topics than what I wanted to do in this book. Likewise, I have said virtually nothing about the theory of "exposition," or about the theory of *"probationes terminorum"* that grew up after c. 1350 and is associated with the name of Richard Billingham. In fact, these two theories are badly in need of a lot more research before we will be in a position to say anything very illuminating about them.

Again, I have treated the theory of syncategoremata and the sophismata-literature only cursorily, insofar as they fed directly into other points I wanted to make. Likewise, I have not discussed the extremely interesting applications of supposition-theory to the theory of motion and change.

So, you see, this book is really pretty limited. Nevertheless, what you find in it will prepare you adequately, I think, to pursue those other topics on your own, should you care to do so.

B. The Intended Audience

When I taught this material in the classroom, my audience was often very mixed. I had people from Philosophy who had a good sense of what was theoretically important and what counted as a good argument, but for whom the Middle Ages, and for that matter anything before Frege, was at best a vague rumor. At the same time, I had people from Medieval Studies, who knew the history and lore of the period backwards and forwards, but who had no special training in philosophy. I had to accommodate both, and I have tried to continue to be accommodating in this book. So you will find that I use a minimum of logical notation, for example, and always include a paraphrase when I do use it. Likewise, I try to motivate the philosophical issues that come up, and don't just leap into them headlong. On the other side, you will also find little lessons about Latin syntax as well as commonplaces about the structure of the mediaeval university system, for example.

I hope no one will feel condescended to by this approach. On the other hand, if you do find something you don't understand after giving it some thought, just read on.

C. What Mediaeval Logic Is Not

Readers coming at this material from the point of view of modern logic may be surprised to find very few of what are sometimes called "logical results" — that is, theorems about interesting general logical truths. In fact, you may think

what we are doing isn't really "logic" at all, but more philosophy of language, or even philosophy of mind or epistemology. Why then call it logic?

The short answer to this of course is that *they* called it "logic," and they got there first! A less contentious response would be to point out how much the close connection between logic and the foundations of mathematics in the recent period has shaped our view of what logic is, to the point of making it hard sometimes for us to think of logic in any other terms.

But it wasn't always that way. In particular, it wasn't that way at all in the period we will be discussing. Mediaeval logic had very little to do with "theorem proving" and everything to do with the nature of reasoning and even of thought. Like it or not, that's what you will find in this book.

D. The Future of This Book

As you will see from the title page, I describe this book as "Version 1.1" The original Version 1.0 was produced in 1996. This minor upgrade to Version 1.1 amounted to a fixing a few typos, renegotiating some formatting issues, and updating the Bibliography slightly. If time permits, I would like to remedy some defects of this book in later versions. For example, Fabienne Pironet has kindly allowed me access to her new critical edition of Buridan's *Sophismata* (forthcoming), but I have *still* not incoporated her text into this version of the book; it would be a substantial improvement. Likewise, my own complete translation of Burley's *De puritate artis logicae* has been now published since Version 1.0 was produced, but I have not yet inserted references to it in this Version 1.1.

If you should find any less obvious defects in this book, including simple typos or points that could be explained more clearly, I will greatly appreciate your letting me know: e-mail to *spade@indiana.edu,* "hard"-mail to Department of Philosophy, Sycamore Hall 026, Indiana University, Bloomington, IN 47405, USA.

E. Translations

Finally, for copyright purposes, all translations in this book are my own, even where I cite other translations for comparison.

Chapter 2: Thumbnail Sketch of the History of Logic to the End of the Middle Ages

I want to begin by giving you a little thumbnail sketch of the history of logic up to the end of the Middle Ages. This will be merely the sketchiest of sketches, and is meant only to provide background information and context. No doubt it will seem a little encyclopedic in places, but read it anyway. We will get down to more theoretical matters in the next chapter.

One of the standard, although by now older, histories of logic is Bocheý-ski's *A History of Formal Logic*. In that book,[1] Bocheýski remarks that in the history of *Western* logic — that is, disregarding logic in India[2] — there are three great periods. In other words, Western logic did not develop in a more or less continuous process from ancient times to the present, as for example the fine arts perhaps did (depending on your views about the fine arts). Rather, there were short periods of intense activity, alternating with long periods of decline and stagnation.

The main periods of activity were:

(a) The ancient period, from roughly 350 to 200 BC.

(b) The mediaeval period, from roughly 1100 to 1450 or so. (That's the period of mediaeval activity in *logic*. For other purposes, the mediaeval period may be taken to be longer.[3])

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[1] Bocheýski, *A History of Formal Logic,* Part One, § 3, pp. 10–18. (For complete bibliographical information on works cited in these footnotes, see the *Bibliography* at the end of this volume.)

[2] Bocheýski claims (*ibid*., pp. 10–11) that formal logic originated in two and only two places: in the West and in India. What we find in China, he says (p. 10), "is a method of discussion and a sophistic" — that is, a technique for disputation and a discussion of fallacies — but nothing like a full-blown formal logic. Logic in other areas (for example, Islamic logic), he continues, was derivative on the logic of these two original regions.

[3] It is now beginning to be realized that the period between late mediaeval and early modern philosophy is not entirely as logically sterile as has often been supposed. See, for example, Ashworth, *Language and Logic in the Post-Medieval Period*, and Ashworth, *Studies in Post-Medieval Semantics.*

(c) The modern period, beginning with Boole, and then Peano and Frege, and so on. In other words, from the middle or late nineteenth century to the present.

Of these three periods, the mediaeval period — the one we will be discussing in this book — is perhaps the longest.[4] It ran for about 350 years, whereas the ancient period in logic was confined to about 150 years, and the modern period has not yet lasted even quite that long.

On the whole, Bocheński's observation is correct, although lots of qualifications need to be made.[5] While it is true that there are these three *great* periods of activity, one can also find isolated figures here and there between these periods. Perhaps most significant are:

(d) Boethius (480–524/525 AD — just remember that he was alive in the year 500). Perhaps he shouldn't be regarded as an exception because, as we shall see in a little while, although his logical work was tremendously important and influential, it does not seem to have been *especially* original. But the jury is still out on Boethius.

(e) Leibniz (1646–1716). It is pretty generally agreed that Leibniz did some very good logical work.

Thus:

[4] I say "perhaps," because one can argue about the dates. On the one hand, it is arguable that the major theoretical contributions to mediaeval logic were already made by 1350, and that the period 1350–1450, although logically active, is undistinguished. (In fact, I shall argue it myself. See pp. 46–50 below.) On the other hand, one might also argue that significant contributions were made to ancient logic right up to at least the time of Galen (129–c. 199 AD), if not later.

[5] For the most part, Bocheński was perfectly well aware of these qualifications. But see n. 3 above.

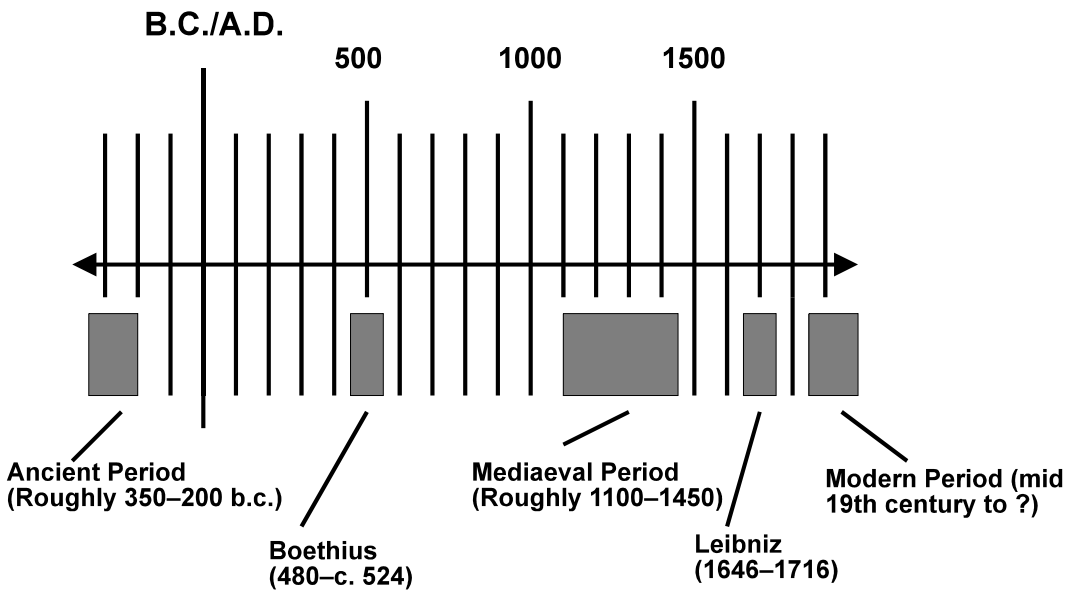

Figure 1: Main Periods in the History of Western Logic

A. The Early Ancient Period

In the Middle Ages, there was a tradition according to which the pre-Socratic philosopher Parmenides (5th century BC) invented logic while sitting on a rock in Egypt.

The twelfth century author John of Salisbury (c. 1115–1180), for instance, while describing the history of logic in his *Metalogicon* (dated 1159), says[6]:

> Parmenides the Egyptian spent his life on a rock, in order to discover the reasonings of logic.

And Hugh of St. Victor, a somewhat earlier twelfth century author (1096–1141), writes in his *Didascalicon* (dated in the late 1120s)[7]:

> Egypt is the mother of the arts. From there they came to Greece, [and] then to Italy. Grammar was first discovered there [= in

[6] John of Salisbury, *Metalogicon,* II.2, Hall ed., p. 58.21–22; Webb ed., pp. 62–63. See John of Salisbury, *The Metalogicon of John of Salisbury,* McGarry, trans., pp. 76–77. On the date, see McGarry's translation, p. xix. Do not be deceived. The title of John's book should not be taken to imply that it has anything at all to do with "metalogic" in the modern sense. In fact, it is a good question just exactly *why* it is called *"Metalogicon"* in the first place.

[7] Hugh of St. Victor, *Didascalicon*, III.2, Buttimer ed., p. 52. See Hugh of St. Victor, *The Didascalicon of Hugh of St. Victor,* Taylor trans., p. 86. (On the date of the text, see *ibid.*, p. 3.)

> Egypt] in the time of Osiris the husband of Isis. There too dialectic was first discovered by Parmenides who, avoiding cities and crowds, sat for quite a while on a rock and so thought out dialectic. Thus [the rock] is called "the rock of Parmenides."

A little later in the same work, Hugh tells us that old Parmenides is reported to have spent fifteen years up there on his rock.[8]

Around 1250, the encyclopedist Vincent of Beauvais (d. 1264) tells the same story, but moves Parmenides' rock from Egypt to the Caucasus mountains — perhaps significantly, the traditional home of that greatest of all discovers, Prometheus[9]:

> But one reads about Parmenides that he discovered logic on a rock in the Caucasus.

I bring up this legend in order to lead into my topic. First, I hasten to reassure you that there is not a word of truth in the story — except perhaps for the fact that Parmenides was one of the very first philosophers to have *argued* for his views, rather than just proposing a kind of vision of the way things are. In that sense, if you want to stretch a point, Parmenides may be said to have invented *dialectic,* or the art of argumentation.[10] But there is no evidence whatever that Parmenides ever systematically studied and formulated the rules of argumentation for their own sake — which is what we more normally think of as "logic," or at least as the beginning of logic. For that matter, I suppose there is no real evidence that Parmenides was even aware of the implicit rules of argumentation he was employing in presenting his position. And there is *certainly* no evidence that he ever did any of this while living on a rock in Egypt!

Nevertheless, an explicit awareness of at least certain kinds of argument-forms can perhaps be attributed to Parmenides' disciple Zeno the Eleatic (5th century BC), the famous originator of Zeno's Paradoxes. His several paradoxes share to some extent a common form, and so suggest (although it is no more than a suggestion) that Zeno was aware of the common form involved — namely, *reductio* (reduction to absurdity), whereby one proves a point by showing that its contra-

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[8] Hugh of St. Victor, *Didascalicon,* III.14, Buttimer ed., pp. 64–65: "One reads that Parmenides the philosopher sat for fifteen years on a rock in Egypt." See the Taylor trans., p. 97; and Klibansky, "The Rock of Parmenides," p. 179.

[9] Vincent of Beauvais, *Speculum historiale,* III.44, p. 100. See Klibansky, "The Rock of Parmenides," p. 179. For much fascinating information about the historical origins of this bizarre legend, see Klibansky's article just cited. Vincent of Beauvais' *Speculum historiale* is the fourth and last part of his mammoth *Speculum quadruplex* or *Speculum maius*. The other three parts are known as the *Speculum naturale*, the *Speculum doctrinale*, and the *Speculum morale*. In the Douay edition of 1624, which I am using, each part is published in a separate volume.

[10] In the Middle Ages, 'dialectic' meant at least two different things, depending on who was using the term and in what period. Sometimes it was used interchangeably with "logic" broadly speaking. Other times it was used more narrowly, to refer to the study of certain kinds of persuasive argument that need not be strictly valid and certainly not strictly demonstrative. See Stump, *Dialectic and Its Place in the Development of Medieval Logic*.

dictory leads to impossible consequences. Zeno's paradoxes, according to at least one interpretation, drew out the supposedly absurd consequences of a non-monist, non-Eleatic, view of things, and so (if they work) refuted such a view.

Indeed Aristotle himself, who certainly ought to be an authority on such matters, calls Zeno "the founder of dialectic," according to a fragment of a lost work quoted by the doxographer Diogenes Laertius in the third century AD.[11] The same quotation is found earlier in Sextus Empiricus, who was active around 200 AD, and who (unlike Diogenes) is fairly reliable on matters of quotation and history.[12]

In fact, it appears to have been this remark of Aristotle's, that Zeno was the "founder of dialectic," that — by a curious twist of fate — was behind the mediaeval legend of Parmenides the Egyptian.[13]

Nevertheless, even giving Zeno his due, it is still true that he did not originate the reflective and systematic study of logical rules and laws in their own right. That seems to have first been done by Aristotle (384–322 BC).[14]

At the end of his little book *Sophistic Refutations* (an important work we will have occasion to refer to a little later[15]), Aristotle tells us[16] that usually new discoveries have relied on the results of previous labors by others, so that, while the achievements of others may be small, they are seminal. But then he says[17]:

> But in this matter [*i.e.*, in logic] it is not that some of it had been thoroughly worked out beforehand while some of it had not. Rather, there was nothing at all!

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[11] See Diogenes Laertius, *Vitae philosophorum,* VIII.57 (Long ed., p. 419.10): "Aristotle in the *Sophist* [now lost] says Empedocles was the first to invent rhetoric, and Zeno dialectic"; and IX.25 (Long ed., p. 450.13): "Aristotle says [Zeno] was the inventor of dialectic, as Empedocles [was] of rhetoric." (Compare the Hicks translation, vol. 2, pp. 373 & 435.) The former passage is also given in Kirk and Raven, *The Presocratic Philosophers,* p. 287, § 364. The claim is cited and discussed in Kneale and Kneale, *The Development of Logic,* pp. 7–9.

[12] Sextus Empiricus, *Adversus mathematicos*, VII.7 (*Opera*, Mutschmann, ed., vol. 2, p. 4): "For Aristotle says Empedocles was the first to contrive rhetoric, of which dialectic is the counterpart — that is, the coequal, for it deals with the same [subject-] matter (just as the Poet [= Homer] called Odysseus 'godlike', that is 'god-equal'). [There is some Greek word-play going on here. Don't worry about it.] And Parmenides does not seem to have been inexperienced in dialectic, since Aristotle again called [Parmenides'] acquaintance Zeno the founder of dialectic." (Compare Bury's translation, vol. 2, p. 5.) Books VII and VIII of the *Adversus mathematicos* (= *Against the Professors*) are also known as the *Adversus logicos* (= *Against the Logicians*). Again, they are known as Books I and II of the *Adversus dogmaticos* (= *Against the Dogmatists*). The latter work also contains three other books: *Against the Skeptics*, *Against the Physicists*, and *Against the Ethicists*, which are counted as *Adversus mathematicos*, Books IX–XI, respectively. I'm sorry; I didn't make this up, Sextus seems to have been against lots of people.

[13] For the details, see Klibansky, "The Rock of Parmenides."

[14] See Kneale and Kneale, *The Development of Logic,* p. 16. The crucial qualifications in this claim are in the words 'reflective and systematic'. It is true, of course, that much groundwork had already been done before Aristotle, by Zeno and others as well. See *ibid.*, Ch. 1 (pp. 1–22). Still, there is no doubt that something importantly new began with Aristotle.

[15] See pp. 12, 38–40, below.

[16] *Sophistic Refutations* 34, 183^{b}17–23.

[17] *Ibid*., 183^{b}34–36.

In other words, Aristotle is claiming, logic — as the explicit and systematic study of the rules and forms of argumentation — was his own invention, pretty much *ex nihilo*! Curiously enough, this boast appears to be true, even after all the appropriate qualifications and provisos have been taken into account. Logic as we know it today began with Aristotle.

Throughout the ancient world, Aristotelian or *Peripatetic* logic — the logic of Aristotle and his followers, especially of his disciple Theophrastus (c. 371–c. 286 BC), who was the first head of the Lyceum after Aristotle[18] — was one main stream of logic. But there was a second main tradition of logic too, the logic of the Megarians and the Stoics. This tradition differed from Peripatetic logic in important respects. Let us look briefly at each of these two traditions in turn. But before we do that, here is a little diagram, just so you can keep everyone straight (all dates in this diagram are of course BC):

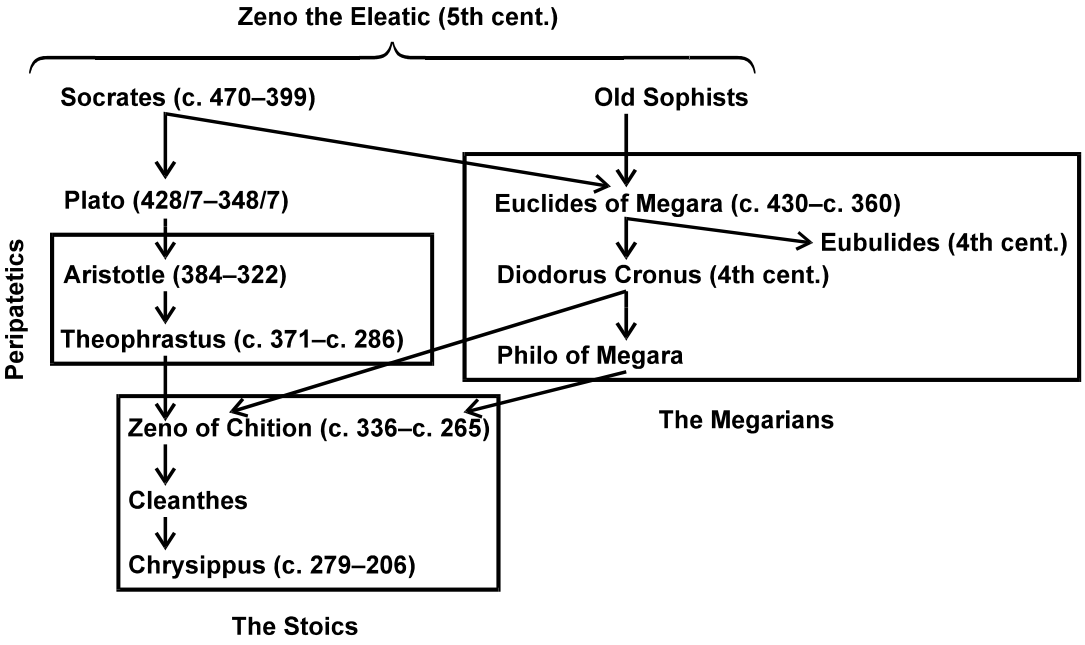

Figure 2: The Ancient Period in Logic

B. Aristotelian Logic

First, let's talk about Aristotelian logic.

Aristotle wrote six logical works, which were collected and arranged in the first century BC by Andronicus of Rhodes, who is the man responsible for the arrangement of the Aristotelian writings in the form in which we have them to-

[18] On Theophrastus, see Kerferd, "Theophrastus," and Bocheński, *La logique de Théophraste.* We shall have more to say about Theophrastus in a little while.

day. The collection of logical writings came to be called the *Organon* — Greek for "tool."

For Aristotle, you see, logic was not a demonstrative theoretical science at all. The demonstrative theoretical sciences, for him, were: **(a)** physics, or philosophy of nature; **(b)** mathematics; and **(c)** metaphysics, or what he called "theology."[19] Logic had no place in this division. Rather, from this standpoint, logic was a *tool* used by all the sciences.

Note that to say that logic is not a *science*, in this special sense, is in no way to say it is not a rigorous discipline. The notion of a science was a very special one for Aristotle, most fully developed in his *Posterior Analytics*.

Aristotle's six logical works were these:

(1) *Categories*. This work is border-line logic; it might just as well be viewed as metaphysics. The book contains a discussion of Aristotle's ten basic kinds of entities: substance, quantity, quality, relation, place, time, position (*i.e.*, orientation, not the same as "place"), state, action and passion (*i.e.,* being passive, the opposite of action). Some late ancient authors, and many mediaeval authors, interpreted this work as being about language, as about the ten basic kinds of *terms*, rather than about ten basic kinds of *entities*. William of Ockham, for example (we will talk about him *a lot* below), considered it that way.

(2) *De interpretatione* or *On Interpretation*. Oddly enough, this work is almost always referred to in the Middle Ages by its Greek title *Peri hermeneias* (the spelling varies radically — mediaeval Latins had absolutely no idea how to spell most Greek words, even in transliteration); I have *never* seen it referred to then as the *De interpretatione*. Two things go on in this work:

- **(a)** Aristotle's semantics — that is, his theory of the relation between language and the world: the *interpretation* of language. Hence the title.
- **(b)** A study of the structure of certain basic kinds of *sentences* or *propositions* and their interrelations: categorical *proposition*s, the square of opposition, conversion, etc.

(3) *Prior Analytics*. This is certainly the most original purely logical work Aristotle wrote. It is also the most abstract and formal. The work contains Aristotle's theory of the syllogism. The syllogism is a special kind of argument, using premises and conclusions that are propositions with a special form. We will say more about that in a moment.

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[19] See, for example, the division of the sciences in *Metaphysics* VI, 1.

Note the progression in these first three works of the *Organon*: the *Categories* is about terms (at least according to some interpretations); the *De interpretatione* is about propositions, which are made up of terms; and the *Prior Analytics* is about arguments, which are made up of propositions. This clever hierarchical ordering (which is no doubt the basis for Andronicus of Rhodes' arranging them in this sequence) is followed in many mediaeval presentations of logic — for instance, Ockham's.

(4) *Posterior Analytics*. This contains Aristotle's theory of scientific demonstration in his special sense. Not all valid syllogisms are "demonstrative" for Aristotle — not even all *sound* syllogisms. It is the notion of "demonstration" in his special sense that Aristotle tries to fix in this work. In effect, it contains Aristotle's account of the *philosophy of science* or of *scientific methodology*.

(5) *Topics*. This is probably an early and certainly a very long work of Aristotle's, in eight books. It contains a study of *non*-demonstrative reasoning, and is effectively a grab-bag of how to conduct a good argument.

(6) Finally, there is Aristotle's little work, *Sophistic Refutations*, a kind of cataloguing of the various kinds of fallacies. It was originally intended to be the ninth book of the *Topics*, but is often treated separately. This little work, as we shall see, was of immense importance in the development of mediaeval logic.

In addition, among Aristotle's logical writings I should perhaps mention Book ¸ (= Book IV) of the *Metaphysics*, which is sometimes regarded as a kind of logical work of its own. It contains a defense of the Law of Non-Contradiction. Nevertheless, although it may be of some interest for us, this work was not generally regarded as part of the *Organon.*

1. Important Characteristics of Aristotelian Logic

(1) As his work developed, Aristotle became more and more concerned with the notion of a "demonstrative" science. And the paradigm of a demonstrative science appears to have been geometry, in something like the form in which it would later be developed by Euclid (fl. c. 300 BC). This special concern occupied Aristotle quite a bit. But not so the Stoics, as we shall see.

(2) Aristotle's logic was a *term* logic. To explain what this means, consider a syllogism in the mood known in the Middle Ages as "Barbara" (we will talk about these names shortly):

Every β is an α.
Every γ is a β.
Therefore, every γ is an α.

The 'α', 'β' and 'γ' here are variables — that is, place-holders.[20] What we have then is a kind of schema. *Any* argument of the above form is a syllogism in "Barbara."

But what are the 'α', 'β' and 'γ' place-holders *for*? They are place-holders for *terms*. And in that sense, Aristotle's logic is a *term*-logic. For example,

> Every animal is a substance.
> Every man is an animal.
> Therefore, every man is a substance.

The bulk of Aristotle's logic concerned *analyzed* propositions like this. They were "analyzed" into the following components:

(a) a quantifier ('every', or 'some');
(b) a subject term;
(c) a copula ('is' and its various tensed and modal forms);
(d) an optional negation ('not');
(e) a predicate term.

Aristotle's codification of valid logical rules — for example, the rules of conversion and opposition in the *De interpretatione,* and of the syllogistic as presented in the *Prior Analytics* — applied for the most part only to propositions of this special sort, which are called *categorical* propositions.[21]

2. Opposition, Conversion, and the Categorical Syllogism

Here is a summary of virtually everything you will ever need to know — and much more — about categorical propositions, their oppositions and conversions, and syllogisms made up of them.[22]

Be warned! Some of what I will be saying here is not really "originally" Aristotelian, but represents a more or less standard development of Aristotelian doctrine in the Middle Ages and later. I will try to distinguish for you what *is* genuinely in Aristotle from what isn't. Also, note that not all the mediaeval authors we will be talking about in this book defined things exactly the way they

[20] Aristotle seems to have been the first one to use variables of any kind systematically in the study of logic. I don't have to tell you how important this development was. But I will anyway: without variables, Aristotle would not have been able to achieve anything close to the level of generality he did in logic.

[21] Nevertheless, Aristotle very often formulates categorical propositions differently. For example, he will say things like "α belongs to every β" or "α is predicated of every β." These are plainly meant to be equivalent to what we may regard as the "canonical" form "Every β is an α." Such alternative formulations are Aristotle's *regular* way of putting things in the *Prior Analytics*.

[22] For still more about these topics, see Bird, *Syllogistic And Its Extensions*.

will be set up here — particularly when it comes to the names of the syllogisms and the ways of defining the various syllogistic "figures." In reading these people, you have to take these things as they come and just try to figure out what a particular author means from the context. Here we go:

a. Kinds of Categorical Propositions

Where **S** and **P** are general terms (they're supposed to suggest "subject" and "predicate") and x is a singular term,[23] we have the following main kinds of categorical propositions. In the first four cases, I have also given you (in parentheses) the "code name" by which the form is often referred to in modern literature. (The others don't have such "code names.")

Universal Affirmative (**A-form**) 'Every **S** is **P**'
Universal Negative (**E-form**) 'No **S** is **P**' (= 'Every **S** is not **P**')
Particular Affirmative (**I-form**) 'Some **S** is **P**
Particular Negative (**O-form**) 'Some **S** is not **P**'
Indefinite Affirmative '**S** is **P**'
Indefinite Negative '**S** is not **P**'
Singular Affirmative 'x is **P**'
Singular Negative 'x is not **P**'.

Note that all explicitly quantified categorical propositions — that is, those with 'every', 'no' or 'some' — are of **A**, **E**, **I**, or **O**-form, and that among these the affirmative ones are the **A** and **I**-forms, while the negative ones are the **E** and **O**-forms. '**A**' and '**I**' are the first two vowels of Latin *'affirmo'* (= I affirm), whereas '**E**' and '**O**' are the vowels in Latin *'nego'* (= I deny). This is where those four forms got their names. And that tells you, of course, that their names are not originally Aristotelian. (Aristotle spoke Greek, as you know, not Latin.) They arose much later; I don't know exactly when.

Categorical propositions may be classified according to their *quality* (affirmative or negative) and their *quantity* (universal, particular, indefinite, singular). (Again, the actual terms 'quality' and 'quantity' in this usage are not originally Aristotelian.) For syllogistic purposes, although no more in everyday Greek or Latin than in everyday English, indefinites are always treated as particulars,[24]

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[23] I don't mean by this just any old term that is singular in number. I mean a proper name (for example, 'Socrates'), a demonstrative pronoun ('this' or 'that'), or a demonstrative phrase ('this man', 'that animal'). The contrast here is not *singular term/plural term* but rather *singular term/general term*. This is a fairly standard way of talking, and I will use it frequently throughout this book.

[24] This convention does have an authentically Aristotelian pedigree, at least for affirmative propositions. See *Prior Analytics* I, 4, 26^a28–30: "Similarly if [the premise] BI [that is, the premise in which B is the predicate and I is the subject — see n. 21 above] is indefinite, as long as it is affirmative. For there will be the same syllogism whether it is taken indefinitely or particularly." See also *Prior Analytics* I, 7, 29^a27–29: "It is also clear that an indefinite [proposition] put instead of a particular affirmative will produce the same syllogism in all figures." The general claim that indefinites and particulars are *always* interchangeable in syllogistic contexts appears to

and singulars are treated as universals.[25] Thus 'Socrates is mortal' is treated like 'Every Socrates is mortal', and 'Man is an animal' is treated like 'Some man is an animal', *not* like 'Every man is an animal' (although the latter is true too in the case of 'man' and 'animal'). Hence the **A**-, **E**-, **I**-, and **O**-forms are the four basic kinds of propositions used in syllogistic.

b. The Square of Opposition and the Laws of Opposition

The so called "square of opposition," as the actual *diagram* given below, is not to be found in Aristotle himself. But most of the doctrine codified in it can be found in Aristotle's *De interpretatione,* Ch. 7. There Aristotle talks about the various ways in which categorical propositions can be "opposed" to one another. The particular kinds of opposition he has in mind there all hold between pairs of propositions related as affirmative and negative and having the same subject and predicate terms. (Their "quantity" may vary.)

Arrange the basic categorical forms in a square, with the **A**-, **E**-, **I**-, and **O**-forms in the upper left, upper right, lower left, and lower right corners, respectively. Then we have:

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have been first made by Alexander of Aphrodisias, the great commentator on Aristotle from the third century AD. (See Alexander of Aphrodisias, *Alexandri in Aristotelis Analyticorum Priorum librum I commentarium*, Wallies ed., p. 30 lines 29–31: "He [Aristotle] doesn't speak about [converting] indefinites, because they are of no use for syllogisms and because they can be [regarded as] equal to particulars.") See ˛ukasiewicz, *Aristotle's Syllogistic*, p. 5.

[25] Aristotle says nothing like this, but in fact there is a certain reasonableness to it. If 'Socrates' is a singular term, then Socrates is (by default) *every* Socrates, I suppose. (Ignore the fact that there might be *several* people named Socrates. That makes the term 'Socrates' an *equivocal* term; it doesn't prevent it from being a *singular* term.) ˛ukasiewicz, *Aristotle's Syllogistic*, pp. 5–7, suggests some interesting considerations about why Aristotle himself omitted any discussion of singular terms from his syllogistic. For some relevant corrections of ˛ukasiewicz, see Austin's review of ˛ukasiewicz's *Aristotle's Syllogistic*, p. 396.

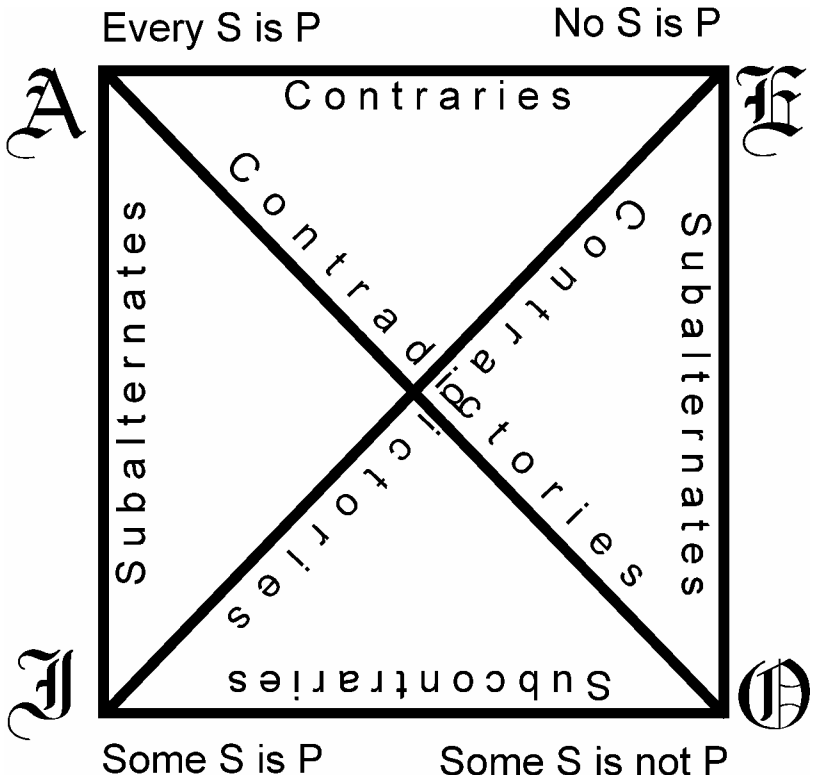

Figure 3: The Square of Opposition

(a) The Law of Contraries: Two contraries may be false together but never true together. (**A** and **E**, across the top line of the square, are contraries.)

(b) The Law of Subcontraries: Two subcontraries may be true together, but never false together. (**I** and **O**, across the bottom line of the square, are subcontraries.[26])

(c) The Law of Contradictories: Two contradictories are never true together or false together; in every case one is true and the other false. (Contradictories are diagonally opposite one another on the square. Thus **A** and **O** are contradictories, and so are **E** and **I**.)

(d) The Law of Subalternation: If a universal proposition is true, then its contradictory is false, so that the *subcontrary* of that contradictory is true. Hence, from a universal affirmative (respectively, negative) to a particular affirmative (respectively, negative) is a valid inference. (Thus, **A** to **I**, **E** to **O** — from top to bottom

[26] Aristotle had no special term for **I**/**O**-pairs; the term 'subcontrary' is a later neologism. But he did discuss the logical relation involved.

along the sides of the squares. **I** and **O** are the subalternates of the subalternands **A** and **E**, respectively.[27])

Notice some things about these relations. First, if the **I**-form is going to be subalternate to the **A**-form, then the **A**-form must be read with "existential import." That is, if there are no **S**'s, then 'Every **S** is **P**' has to be read as *false* — not *true* as on the modern reading.[28] Second, the **I**-form 'Some **S** is **P**' may be false if there are **S**'s that fail to be **P**'s, but also if there are no **S**'s at all (and so *a fortiori* none that are **P**'s). Since the **I**-form is false under either of these two conditions, its contradictory **E**-form will be true under either of the same two conditions — and in particular, it will be true if there are no **S**'s at all. Thus, **E**-forms do *not* have existential import. But in that case, how can 'Some **S** is not **P**' validly follow from 'No **S** is **P**'? For that matter, how can 'Some **S** is not **P**' be the contradictory of the **A**-form 'Every **S** is **P**', since both appear to have existential import and so are both *false* in case there are no **S**'s, thereby violating the Law of Contradictories?

Aristotle has nothing to say about these questions. But note that they arise *only* if we allow there to be no **S**'s. Probably the correct way to avoid the problems is to realize that the whole theory of opposition, and for that matter the theory of conversion and the whole theory of the syllogistic, were never intended to handle non-denoting terms. They were designed for the theory of demonstrative science, where we are talking about real things, after all, not fictions.[29]

When later authors who did not have Aristotle's special interest in the theory of demonstrative science sought to extend this logical machinery to accommodate non-denoting terms, it became plain that something was going to have to

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[27] Again, Aristotle had no special term for the subalternation relation.

[28] This doctrine of "existential import" has taken a lot of silly abuse in the twentieth century. As you may know, the modern reading of universal affirmatives construes them as quantified material conditionals. Thus 'Every **S** is **P**' becomes $(x)(\mathbf{S}x \supset \mathbf{P}x)$, and is true, not false, if there are no **S**'s. Hence $(x)(\mathbf{S}x \supset \mathbf{P}x)$ does *not* imply $(\exists x)(\mathbf{S}x)$. And that is somehow supposed to show the failure of existential import. But it doesn't show anything of the sort. Think of it like this: Aristotelian and mediaeval logic did not quantify variables, as modern logic does, but rather terms. They did not say "for all $\underline{x}$" but rather "every man" or "some dog." The latter is, in a curious way, the more general procedure. To say "for all $\underline{x}$" is like saying "every *being*" or "every *thing*." Hence to restrict quantification to *variables* is like restricting *term*-quantification to only the most general, all-inclusive terms ('being', 'thing', etc.). In short, the subject terms in categorical propositions in effect play the role of *specifying the domain of discourse*, which need not be all beings, all things whatever, but may be more restricted — all dogs, all men, etc. The modern equivalent of existential import, therefore, is not: $(x)(\mathbf{S}x \supset \mathbf{P}x) \therefore (\exists x)(\mathbf{S}x)$, but rather $(x)(\mathbf{P}x) \therefore (\exists x)(\mathbf{P}x)$. And that *holds* in standard modern logic, which is therefore just as much committed to existential import as traditional logic is. It is so committed insofar as the domains over which its quantifiers range ("beings," "things" in general — not just "men" or "dogs") are required to be *non-empty*. If one *really* wants to get rid of existential import, in other words, the way to do it to adopt a so called "free"-logic, in which the inference $(x)(\mathbf{P}x) \therefore (\exists x)(\mathbf{P}x)$ fails. (Of course none of what I have said here means that the use of variables ranging over the entire domain of discourse is not *by far* the better way to do things for lots of purposes — for example, in representing complicated relational statements. But that has nothing to do with the question of existential import.)

[29] See p. 12, above.

give way. Generally, it was the **O**-form that was compromised. Despite its ordinary sense in Greek and Latin (and in English too), the **O**-form 'Some **S** is not **P**' was taken as *not* having existential import. It was read as having the sense "Not every **S** is **P**," as of course it *must* have if it is going to be the contradictory of the **A**-form. As a result, the *affirmative* propositions on the square of opposition were taken as having existential import, but the negative ones were not. This resolution was perhaps not unanimously adopted in the Middle Ages (never assume *anything* was *unanimously* adopted in the Middle Ages), but it is generally safe to read things this way unless you find positive evidence to the contrary.

Finally, note that although the terminology of the square of opposition was primarily intended to apply to propositions sharing the same subject and predicate terms, that terminology was often extended in the Middle Ages to apply to *any* propositions related in the appropriate ways. Thus *any* two propositions that could be true together but not false together were sometimes called subcontraries, whether they shared the same terms or not. So too for the other relations.[30]

c. Conversion

In *Prior Analytics* I, 2, Aristotle stated several rules concerning cases in which the subject and predicate of a categorical proposition may be reversed without affecting its truth value. Such rules later came to be known as the rules of "conversion." Thus **E**-form propositions can be "converted" in this way; their subjects and predicates may be transposed without affecting their truth value. So too for **I**-form propositions. Later, such a straightforward interchange of subject and predicate, leaving all other features of the propositions intact, was said to be a conversion done *simply (= simpliciter)*.

A-form propositions cannot be simply converted like this; 'Every **S** is **P**' and 'Every **P** is **S**' may very well have different truth values. (Every ape is a mammal, but by no means all mammals are apes.) Nevertheless, **A**-forms imply **I**-forms (by subalternation), and the latter *can* be simply converted. Thus a transformation from 'Every **S** is **P**' to 'Some **P** is **S**' will not always preserve truth *value* (since the former may be false even if the latter is true), but it will preserve *truth* (since if the former is true the latter will be true as well). This kind of "modified" conversion, in which not only are the subject and predicate transposed, but the quantifier is weakened from a universal to a particular quantifier — and everything else is left intact — came to be known later as an *accidental (= per accidens)* conversion. (Note that **E**-forms can be converted *both* simply and *per accidens*.)

O-form propositions can be converted in neither of these two ways, neither simply nor accidentally. 'Some people are not Greeks' and 'Some Greeks are not people' have very different truth values, so that **O**-forms cannot be converted simply. And since **O**-forms are already particular in quantity, they cannot be

[30] Except for subalternation. To the best of my knowledge, the terminology of subalternation was never extended in this way. In any case, such an extension would have amounted to nothing more than one-way implication.

"weakened" further in that regard. Hence they cannot be converted accidentally either. In short, **O**-forms cannot be converted at all.[31]

The theory of conversion was not just idle pedantry on Aristotle's part. It played a crucial role in his account of how all other syllogisms could be "reduced" to those of the first figure, as described on pp. 21–25 below.

d. Categorical Syllogisms

A categorical syllogism is an argument that **(a)** is composed of three categorical propositions, namely, two premises and a conclusion; **(b)** employs three terms, each of which is used in exactly two of the propositions of the syllogism.[32] The three terms are called the *major*, the *minor* and the *middle* terms.

i. Major, Middle and Minor Terms

That much is not controversial. But the proper way to define the three kinds of terms in a syllogism is a matter of considerable confusion, both in Aristotle's late-ancient and mediaeval commentators and in the modern literature as well. At *Prior Analytics* I, 4, 26^a21–23, Aristotle remarks that the minor term is "included" in the middle and the middle term in the major.[33] This comment has been the source of much puzzlement. If "inclusion" is meant extensionally, Aristotle's claim appears to be false for all syllogisms except those in the mood *Barbara* that have true premises.[34] (We will discuss figures and moods in a moment.)

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[31] I suppose one *could* reason like this: Since **O**-forms were finally read as the negations of **A**-forms (see p. 18, above), they should be regarded as having *universal* quantity; it's just that the universal quantifier is inside the scope of a negation. Hence their quantity *can* be weakened after all: 'Some **S** is not **P**' (read as 'Not *every* **S** is **P**') can be reduced in quantity to 'It is not the case that *some* **S** is **P**' — which just amounts to the **E**-form 'No **S** is **P**'. And the **E**-form, of course, *can* be simply converted. The case is just the logical dual of the conversion of **A**-forms (which is exactly what you should expect). The **O**-form 'Some **S** is not **P**' can thus be "converted" in this new way to 'No **P** is **S**'. Unlike the other kinds of conversion, this new kind does not always preserve truth value — or even truth — (since the **O**-form proposition may be true even if the **E**-form is false), but it does preserve *falsehood* (if the **O**-form is false, the **E**-form is too). This new kind of "conversion" would then have to be regarded as a third kind, and a new name would have to be given to it. Yes, all this *could* be done — but it wasn't. Still, note that the method of "indirect reduction" described on p. 23, below, appeals to *exactly* this kind of reasoning. Even so, it was not regarded as involving any kind of "conversion."

[32] This definition nowhere appears in Aristotle. At *Prior Analytics* I, 1, 24^b18–20, he describes a "syllogism" more broadly as "an argument (λόγος) in which, once certain things have been posited, something other than what was established happens of necessity from their being so." But this is so general as to apply to *any* argument with more than one premise. In practice, Aristotle generally used the term much more narrowly, as described above.

[33] See also *Prior Analytics* I, 4, 25^b32–36, where the expressions 'major' and 'minor' do not occur, but the middle is defined in such a way that one of the other terms of the syllogism is "included" in it, and it in the third term of the syllogism.

[34] For a good account of the matter, and a plausible appraisal of what it all means, see Austin's review of ˛ukasiewicz's *Aristotle's Syllogistic*, at pp. 398–399.

Whatever we are to make out of that passage, the sixth century Greek commentator John Philoponus (pronounced with the stress on the first 'o': Philóponus) came up with another definition, one that better reflects Aristotle's actual practice. According to him, the major term of a syllogism is the one that is the *predicate in the conclusion*, and the minor term is the one that is the *subject in the conclusion*.[35] The middle term is then the one that doesn't appear in the conclusion at all — and so appears in both premises. This characterization applies generally to all the figures.

I will use Philoponus' definition throughout the rest of this discussion. But please be aware that this usage was not fixed in the Middle Ages.

The premise containing the major term is called the *major premise*; the premise containing the minor term is the *minor premise*. (Often in the Middle Ages the terms 'major premise' and 'minor premise' are used more loosely, to mean simply the "first premise" and the "second premise" in *any* two-premise argument, whether it is syllogistic in form or not.)

ii. Syllogistic Figures

At *Prior Analytics* I, 23, $40^{b}30$–$41^{a}18$, Aristotle describes three "figures" of the syllogism, defined in terms of the position of the middle term in the premises. The middle is:

(a) First figure: the subject in the major premise, predicate in the minor.

(b) Second figure: the predicate in both premises;

(c) Third figure: the subject in both premises.

Then Aristotle adds the odd claim that *all* syllogisms must fall into one or another of these three figures. But on combinatorial grounds alone it is clear that, no matter what Aristotle says, there is one further possibility:

(d) Fourth figure: The middle is the predicate in the major premise, the subject in the minor.

Aristotle recognized such syllogisms and actually gave examples of them, but for some mysterious reason did not think they merited a "figure" of their own. Other authors later were willing to grant a "fourth figure" for such cases. But some people resisted this. Theophrastus, for example, Aristotle's successor in the Lyceum, redefined the first figure so that the middle term is the subject of *one* premise (not necessarily the *major*) and the predicate of the other premise (not

[35] See John Philoponus, *In Aristotelis Analytica Priora commentaria*, Wallies, ed., p. 67.27–29: "So we should use the following rule for the three figures, that the major is the term in predicate position in the conclusion, and the minor [is the term] in subject position in the conclusion."

necessarily the *minor*), and then counted syllogisms of kind **(d)** as belonging "indirectly" to the first figure.[36] Throughout the Middle Ages, most authors counted only three figures — or if they allowed a fourth, regarded it as only the first figure with the premises reversed.[37]

iii. Syllogistic Moods and the Theory of Reduction

All right, now do a little mathematics. With three propositions, each of which may take on one of the four basic categorical forms (**A**, **E**, **I**, or **O**), there are $4^3 = 64$ possible forms of syllogisms in each figure, for a grand total of 256 possible forms in all four figures combined. These forms are called *moods*. Among them, there are *six* valid moods in each figure, for a total of twenty-four valid moods in all. Some of them can be derived from others by "subalternating" the conclusion. Thus, if there is a valid mood with an **A**-form conclusion, the same two premises will also yield a valid syllogism with the corresponding **I**-form conclusion. (So too of course for **E**-form with respect to **O**-form conclusions.) These "subalternate" moods were apparently first discussed by Ariston of Alexandria (c. 50 BC)[38]; Aristotle doesn't mention them at all.

The valid moods, under their mediaeval mnemonic names (which I will explain in a moment), are listed below (I have flagged the subalternate moods with a dagger (†):

First figure:	Barbara, Celarent, Darii, Ferio, Barbari†, Celaront†.
Second figure:	Cesare, Camestres, Festino, Baroco, Cesaro†, Camestrop†.
Third figure:	Darapti, Disamis, Datisi, Felapton, Bocardo, Ferison.
Fourth figure:	Bramantip, Camenes, Dimaris, Fesapo, Fresison, Camenop†.[39]

Now, what about these bizarre names? Well, there is a lot of information encoded in the seemingly nonsensical syllables. First, the sequence of vowels in

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[36] See ukasiewicz, *Aristotle's Syllogistic*, p. 97.

[37] For how it was possible to make this work out, see Ivo Thomas' (the translator's) note to Bocheński, *A History of Formal Logic*, p. 216.

[38] See Patzig, *Aristotle's Theory of the Syllogism*, p. 130 n. 29. The relevant text is translated in Bocheński, *A History of Formal Logic*, p. 140 (§ 24.27).

[39] When the fourth figure moods were regarded as indirect moods of the first figure, they had different names: Baralipton, Celantes, Dabitis, Fapesmo, Frisesomorum. See Bird, *Syllogistic And Its Extensions*, p. 23 n. 13. Bird gives no alternative name for the subalternate mood Camenop, and I do not know of one in actual use. But I suggest 'Celantop', which fits the pattern described below. Note also that these names were not entirely fixed in the Middle Ages.

the mnemonic name[40] gives the sequence of categorical forms in the mood, in the order: *major*, *minor*, *conclusion*. Thus, the name 'Celarent' tells us that it is the name of a valid syllogism with an **E**-form major, an **A**-form minor, and an **E**-form conclusion. (It also happens to be in the first figure, but the name itself won't tell you that.)

With two exceptions (described below), valid moods not in the first figure can be shown to be valid if we assume the four non-subalternate moods of the first figure as axioms. This is done by "reducing" those other moods to one of the four axiomatic first-figure moods. And what is a "reduction"? It is an argument showing, by the rules of conversion described on pp. 18–19 above, together with one of the four axiomatic first-figure syllogisms, that the mood in question (the one to be "reduced") is valid. The procedure for reducing to the first figure is also secretly there in the mnemonic names. Here is the key to unpacking it: **(a)** The initial letter of the mnemonic name is the same as the initial letter of the axiomatic first-figure mood to which the syllogism is to be reduced. For example, Darapti will be reduced to Darii. **(b)** The letter 's' after a vowel (but *not* as the last letter of the name) means: Convert the corresponding proposition *simply* (that is, the proposition going with that vowel). **(c)** The letter 'p' after a vowel (but *not* as the last letter of the name) means: Convert the corresponding proposition *per accidens*. **(d)** When 's' or 'p' occurs as the final letter in a name, it means that the conclusion of the first figure syllogism (the "target" of the reduction) must be converted simply or *per accidens*, respectively. **(e)** The letter 'm' indicates that in performing the reduction you should change (= *mutare*) the order of the premises. (You only have to do that if you want the major premise to come first in the "target" syllogism.) **(f)** Unless it is the first letter of a name (when it means that the mood can be reduced to Celarent), the letter 'c' means that the syllogism cannot be *directly* reduced to the first figure, and must be given an indirect or *reductio* proof. (This is good old *reductio ad absurdum*. Do not confuse it with "reduction" in the syllogistic sense we are now defining.) The conclusion of the new syllogism will contradict (hence the 'c') the premise the mnemonic vowel for which is followed by 'c' in the name. (There are two moods like this; they are the two exceptions mentioned at the beginning of this paragraph. See below for a further explanation.) **(g)** The letters 'b' and 'd' (unless they are the first letters in a name, where they indicate the "target" mood in the first figure), and the letters 'l', 'n', 't', and 'r' serve only to make the name more beautiful and agreeable to the ear.

For example, take Camestres in the second figure. It is of the form:

Every C is B.
No A is B.
∴ No A is C.

[40] Or the first three vowels, in the case of the longer names listed in n. 39 above. Note that, in those longer names, the fourth vowel and anything after that are irrelevant to performing the "reductions" described below.

The first letter of the name is ‘C’. So we are going to reduce Camestres to Celarent in the first figure. Begin by reversing the premises (because of the letter ‘m’ in the name ‘Camestres’):

No A is B.
Every C is B.
∴ No A is C.

Next convert the **E**-form premise simply (because of the ‘s’ after the first ‘e’ in ‘Camestres’). Now that we have reversed the premises, the **E**-form one is the first premise. Thus:

No B is A.
Every C is B.
∴ No A is C.

The ‘t’ and the ‘r’ in the name are there just for fun. The final ‘s’ means that we have to convert the conclusion simply. This gives us:

No B is A.
Every C is B.
∴ No C is A.

And that, gentle reader, is a first figure syllogism in Celarent, as you can verify for yourselves. Hence given Celarent as axiomatic, and given the rule of simple conversion, the premises of Camestres validly imply its conclusion. (We also reversed the premises, but that was only for looks.)

Now that you’ve seen an example written out in full, let me give you two further examples in more abbreviated form. Let ‘s’ be the minor term (the subject of the conclusion), ‘p’ the major term (the predicate of the conclusion), and ‘m’ the middle term. Then here is a syllogism in Camestrop (second figure): Every p is m; no s is m; therefore, some s is not p. Abbreviate this: *Apm; Esm;* therefore, *Osp.* The ‘m’ in the name ‘Camestrop’ means: Reverse the order of the premises. Thus, we get: *Esm; Apm;* therefore, *Osp.* The ‘s’ in the name means: Convert the **E**-premise simply. Thus: *Ems; Apm;* therefore, *Osp.* The premises of this syllogism yield the conclusion *Eps* in Celarent, the “target”-mood of the first figure. The final ‘p’ in the name ‘Camestrop’ tells us to convert the conclusion given by Celarent *per accidens*. So, converting *Eps per accidens*, we get *Osp,* which is the conclusion of our original syllogism.

For our last example, consider Datisi (third figure): *Amp; Ims;* therefore, *Isp.* Convert the minor simply: *Amp; Ism;* therefore, *Isp.* This holds in Darii, in the first figure. That one was easy.

The two exceptional cases that cannot be directly reduced in this way to the first figure are Baroco (second figure) and Bocardo (third figure). Note the ‘c’s in their names. Since both begin with the letter ‘B’, they will both be “reduced” to Barbara in the first figure, although this new or “indirect” kind of re-

duction involves more than what we have seen so far. Here is the technique: Assume the **A**-form premise (that is, the major premise in Baroco, the minor in Bocardo). Next, assume the contradictory of the conclusion. These two assumptions will serve as the premises of a syllogism in Barbara with a conclusion contradicting the **O**-form premise of the original syllogism. Hence, given the premises of the original syllogism, the contradictory of the conclusion must be false, and so the original conclusion must be true. *Q. E. D.* Note that there is no "conversion" involved in these two exceptional cases. The proofs rely on Barbara and *reductio ad absurdum* alone.[41]

This elaborate system of "reducing" the other moods directly or indirectly to the first figure (although not of course the *names* of the moods, which were a mediaeval contribution) represents *the first deductive system* in the history of logic. And it is a truly amazing accomplishment indeed!

The following Latin verse lists the valid non-subalternate moods according to which figure they are in:

Bárbara, Célarént, Darií, Ferióque prióris.
Césare, Cámestrés, Festíno, Baróco secúndae.
Tértia Dáraptí, Disámis, Datísi, Felápton,
Bocárdo, Feríson habét. Quárta ínsuper áddit
Brámantíp, Camenés, Dimáris, Fesápo, Fresíson.

Augustus De Morgan once remarked that these words were "more full of meaning than any that were ever made."[42] The classicists among you will surely have noticed right away that the verse scans in dactylic hexameter, but for the rest of you I have marked the scansion with acute accents.[43] Note also that, while the names of the various moods do contain much information, they do *not* give you any way by themselves to determine *which figure the mood is in*, and so no way to reconstruct the actual form of the syllogism. For that, you need some other kind of mnemonic help, like the little verse above, which was supposed to be memorized.[44]

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[41] Please observe *why* it is that these two moods cannot be "reduced" in the normal way. They both contain an **O**-form conclusion and one **O**-form premise, and **O**-form propositions cannot be converted either simply or *per accidens* (see p. 18 above). Furthermore, the other premise in each case is an **A**-form proposition, and **A**-forms cannot be converted simply but only *per accidens*, into **I**-forms. Thus the normal method of reduction, which proceeds in terms of conversion (and sometimes reversing the order of the premises, which never matters), allows only one thing to do: convert the **A**-form premise. In that case all three propositions in the syllogism are particular in quantity. But it is a general fact about syllogistic reasoning that *at least one* of the premises must be universal in quantity. Hence the usual kind of "reduction" won't work. (See also n. 31 above.)

[42] See De Morgan, *Formal Logic*, p. 130. No doubt he meant "than any *other* that were ever made," but let's not quibble.

[43] Bird, *Syllogistic And Its Extensions*, p. 23, gives a somewhat different scansion, but I suspect it's misprinted. In any case, I can't figure it out as he has it.

[44] Earlier versions of such verses may be found in William of Sherwood, *Introduction to Logic*, Kretzmann, trans., p. 66 (= Grabmann, ed., p. 55; Lohr, ed., § 3.2 lines 4–7, p. 246); Lambert of Auxerre, *Logica*, Alessio, ed., p. 118; and Peter of Spain, *Tractatus* (= *Summulae logi-*

There were some mediaeval disagreements about the details of the set-up sketched above. Don't be too concerned over these disputes, but be prepared to find people saying things that don't conform to the terminology as defined above.

3. Last Words About Aristotle and a Few About Theophrastus

There is much more that could be said about Aristotle. For example, he *invented* modal logic. But we will not be talking about those other topics in any detail in this book. And, you will be relieved to hear, we will not be saying anything more about syllogistic.

Oddly enough, Aristotle, who gave us such a detailed and elaborate theory of the syllogism, seems not to have been interested at all in inference-patterns that hold for propositions of *any* form whatever. For example:

If A then B.
But A.
Therefore, B.

Here, the 'A' and the 'B' are not place-holders for terms, but rather for whole propositions — and not just for special *categorical* propositions either, but for *any* statements at all.

Aristotle did not study this latter kind of logical rule — that is, he did not develop any systematic *propositional* logic — although of course he *used* many such rules implicitly in his reasoning, much as Zeno had used logical rules of inference without studying them in their own right.

Such rules of propositional logic *were*, however, studied by Theophrastus.[45] They were called *hypothetical* syllogisms, even though of course they were not syllogisms at all in the original Aristotelian sense of the word. They belonged to what we would call *propositional* logic.

Despite Theophrastus, for reasons we shall see in a little while, the study of propositional logic, as opposed to term-logic, never caught on very much in Peripatetic circles. The Peripatetics tended to downplay it, and to focus instead on term-logic — the syllogistic, or roughly what we would call quantification theory in a very limited form.

C. Stoic Logic

Let us turn now to Stoic logic. Probably the best single source you can read on this topic is the little book by Benson Mates entitled *Stoic Logic*. You can

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cales), De Rijk, ed., p. 52 (= Peter of Spain, *Language in Dispute*, p. 46). These authors will be discussed below. All come from the thirteenth century.

[45] At least such work is credited to him. We don't have any of it.

find more recent work; in fact, you can find quite a lot of it.[46] But Mates' book is quite easy to get into, and makes for very interesting reading — both philosophically and in terms of "lore and gossip" about the Stoics, who were a very odd bunch indeed and about whom there is a *lot* of "lore and gossip" that deserves to be repeated, whether it is all true or not.

The term 'Stoic logic' really refers to the logical doctrines of two quite distinct groups of people. (The *groups* were distinct, even though their logical views were more or less in the same tradition.)

The first group was the so called *Megarians* — the followers of Euclid (= Euclides) of Megara (c. 430–c. 360 BC),[47] who was a pupil of Socrates. (He is not to be confused with the Euclid who came up with Euclidean geometry, who was a different person altogether.) The "Megarians" who are relevant for logic are:

(a) Eubulides — a pupil of Euclides, and reputed (in some circles at least) to have been the original discoverer of the Liar Paradox.[48]

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[46] See especially Frede, *Die Stoische Logik*, and the papers collected in *Les Stoïciens et leur logique*.

[47] For the dates throughout this section, I am relying on Lejewski, "Ancient Logic."

[48] The attribution is found in Diogenes Laertius, *Vitae philosophorum* II, 108: "Eubulides the Milesian belongs to Euclides' school. He raised many arguments in dialectic: the Liar, the Unnoticed, Electra, the [Man] in a Veil, the Heap, the Horns, the Bald Head." (See the Hicks translation, vol. 2, p. 237. Do not worry about identifying all these puzzles. But do note that "the Heap" — Greek "Σωρίτης" = "Sorites" = "heap of corn" — is the puzzle behind much of the modern discussion of "vague predicates.") The claim that Eubulides invented the Liar Paradox is repeated in Kneale and Kneale, *The Development of Logic*, p. 114. Besides the passage in Diogenes Laertius, they also give two references to Cicero at p. 114 n. 2. But the first, to *De divinatione* II, 4.11 (see Falconer, trans., pp. 381 & 383), merely mentions the paradox (along with the "Heap") without stating it: "But how you might resolve the 'Liar', which they call the 'ψευδόμενον', or how you might refute the 'Sorites' (which, if necessary, one can call by the Latin word '*acervalis*' [= heaped up] — but there is no need, for like 'philosophy' and many [other] Greek words, 'Sorites' is in common circulation in Latin speech), these too are for the dialectician to say, not the diviner." The second Ciceronian passage, *Academica* II, 96 (see Rackham, trans., pp. 387, 589, & 591) does formulate the paradox pretty explicitly:

> Surely it is the [very] foundation of dialectic that whatever is uttered — they call it an 'ἀξίωμα', which is so to speak a 'proposition' — is either true or false. But then are [propositions like] these true or false: 'If you say you are lying, and say that truly, you are lying'? You people say these [propositions] are 'inexplicable', which is worse than what we call 'uncomprehended' and 'unperceived'.
>
> But I pass over this, and ask: If these cannot be explained and no verdict is [to be] found for them so that you can answer whether they are true or false, then what happens to the definition 'A proposition is what is either true or false'? When facts are assumed, let me add that some things are supposed to follow from them while others, which are contrary in kind, are to be rejected. So how do you judge the following to be argued: 'If you say it is now light and speak the truth, it is light; but you do say it is now light and do speak the truth; therefore, it is light'? Of course you test the form [of the argument] and say it is

(b) Diodorus Cronus (4th century BC).
(c) Philo of Megara, his pupil.

The latter two were especially significant for logic. We will discuss some of their doctrines in a moment.

The second group of people referred to when we talk about "Stoic logic" is the Stoics proper (actually, the "Early" or "Old" Stoics — there was a later Stoic movement that we're not interested in here). In particular:

(d) Zeno of Chition (c. 336–c. 265 BC), the founder of the school. He is not to be confused with Zeno the Eleatic, who came up with Zeno's Paradoxes. That was a much earlier man.
(b) Cleanthes, his successor as head of the school.
(c) Chrysippus (c. 279–206 BC).

Chrysippus especially was a logician of immense stature. He is comparable in importance to (and perhaps even *better* than) Aristotle himself.

By a very odd twist of fate, *all* the original works of what we call "Stoic logic" are now lost. Not a single one remains in anything but the most fragmentary quotations by other authors. I regard this fact as something of a historical mystery. What happened to these works? Why did they all disappear? Chrysippus, in particular, was tremendously prolific. (Diogenes Laertius reports that he wrote more than 705 works, although not all of them were in logic.[49]) But it is all gone now, and seems to have been gone since late antiquity. Certainly no mediaeval

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> quite correctly argued. And so in your teaching you offer it as the "first mode of argumentation." [See p. 31, below, on the five Stoic "indemonstrables."] Therefore, either you will approve of whatever is argued the same way, or else this art [of dialectic] is null and void. So see whether you approve of *this* conclusion: 'If you say you are lying and speak the truth, you are lying; but you do say you are lying and do speak the truth; therefore, you are lying.' How can you not approve of this, since you approved the earlier [argument] of the same form?
>
> These [problems] come from Chrysippus, but he did not solve them. For what would he do with this argument: 'If it is light, it is light; but it is light; therefore, it is light'? Of course he would grant it. For the very structure of the [conditional] link, since you granted the former [part], forces you to grant the latter. So how does this differ from the other argument: 'If you are lying, you are lying; but you are lying; therefore, you are lying'? You deny you are unable to accept or reject the former [argument]; so why the latter any the more? If art, if reason, if method, if in short the force of the argument is valid, it is the same in both cases. But they go so far as to demand that there be an exception for these "inexplicables."

Note that neither text from Cicero says anything at all about Eubulides.

[49] Diogenes Laertius, *Vitae philosophorum* VII, 180, Long ed., pp. 378–379 lines 25–26: "He was so famous in dialectic that people thought if there were dialectic among the gods, it would be none other than Chrysippus'. While [he wrote on] an inordinate number of topics, his style did not go well. He was the most hard-working of anyone, as is clear from the collection of his writings. For they are more than seven hundred five in number." (Compare the Hicks translation, vol. 2, p. 289.)

author shows any first-hand knowledge of their writings. (For one thing, they were in the wrong language, since the mediaeval Latins had in effect forgotten their Greek.)

What we do know about Stoic logic comes second-hand, from people like:

(a) Diogenes Laertius, whom we have met before. He was the third-century AD "doxographer," who is not always to be trusted, but who is invaluable anyway.

(b) Sextus Empiricus, likewise from the third century AD, whom we have also met before. Unlike Diogenes, Sextus was not just out to write droll stories about dead philosophers. He was writing philosophical works of his own. Sextus was an opponent of the Stoics, but was on the whole a fair and accurate reporter of their views.

1. General Characteristics of Stoic Logic

(1) Unlike Aristotle, the Stoics — I will use this term for present purposes to refer to both the Megarians and the Stoics proper — were not so interested in demonstration as Aristotle was. They were more concerned with fallacies and paradoxes, with refutations and forms of disputation. Of course, Aristotle too had written about such things but, as we have seen, his interests gradually shifted more and more to his own special notion of science. The Stoics kept their interests focused on these topics, and developed their studies in these areas to a very high degree.

(2) Again unlike the Peripatetics, the Stoics developed a propositional logic to the neglect of term logic. In fact, Theophrastus' own discussion of so called "hypothetical" syllogisms was perhaps influenced by Megarian logic, although that is not certain.

(3) The Stoic logicians (actually, the Megarians mainly) studied at length the logical properties and defining features of various propositional operators — in particular, disjunction (they knew both inclusive and exclusive disjunction), implication and modality.

2. Particular Doctrines

Let us look at a few points of doctrine in some of the main representatives of Stoic logic.

a. Diodorus Cronus

First, let's talk briefly about Diodorus Cronus. Diodorus was the originator of a very mysterious argument called the *Master Argument.*

According to Epictetus, who is our only good source for this,[50] Diodorus' Master Argument was an argument that the following three claims are jointly inconsistent:

(1) Everything true about the past is now necessary. (In other words, the past is now fixed and settled, and it's too late to do anything about it.) This claim links time and modality in a way you may find odd if you are familiar only with the modern logical literature (and only a part of it, at that). Nevertheless, it is a perfectly legitimate notion.

(2) The impossible does not follow from the possible. This one doesn't give anyone much trouble.

(3) There is something that is possible, and yet neither is nor will be true. In short, there are some possibilities that will never be realized, no matter how long you wait.

Now Diodorus' Master Argument, as I said, was an argument that those three theses are jointly inconsistent. That's the *conclusion* of the argument. But, unfortunately, neither Epictetus nor anyone else bothers to tell us what Diodorus' argument *was* for that conclusion. And it is certainly not obvious what it would be.

Of course, as you might expect given such a situation, lots of people have tried to reconstruct what Diodorus' argument "must have been." Some of these attempts are better than others — either for their philosophical interest or for their historical persuasiveness. Among the more interesting ones, I refer you to the discussion by Arthur Prior.[51]

In any case, whatever his argument was for the joint incompatibility of **(1)**–**(3)**, Diodorus himself was apparently unwilling to give up either **(1)** or **(2)**. And so he rejected thesis **(3)**, which of course was the only thing left he could do. That is, he accepted the opposite thesis, namely:

Whatever is possible either *is* or is *going to be* true.

This claim encapsulates what has come to be called *Diodorean Modality*, one of the ways of defining the modal notions of possibility and necessity in terms of time.

Diodorus also had a view about the proper interpretation of the conditional. According to Sextus Empiricus,[52] Diodorus held that a true conditional 'If

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[50] Epictetus, *Dissertationes* II, 19.1, Shenkl ed., p. 189.9–17 (see the Oldfather translation, vol. 1, p. 359): "The Master Argument appears to have been argued from premises such as the following. Since these three [claims] are in general inconsistent with one another: **(1)** everything past is necessary, **(2)** the impossible does not follow from the possible, and **(3)** the possible is what neither is nor will be true, Diodorus (seeing this inconsistency), used the plausibility of the first two to establish that nothing is possible that neither is nor will be true."

[51] Prior, *Past, Present and Future*, especially § 2.

[52] Sextus Empiricus, *Adversus mathematicos* VIII, 115 (*Opera*, Mutschmann ed., vol. 2, p. 129 — see the Bury translation, vol. 2, p. 299): "But Diodorus says a hypothetical is true that

p then *q*' was one that neither is nor ever was *capable* of having a true antecedent and a false consequent. Given the Diodorean notion of possibility (= capability) that we just saw, this amounts (as you can verify for yourself) to: one that at *no* time (past, present or future) has a true antecedent and a false consequent.

In short, for Diodorus, a conditional isn't sometimes true and sometimes false. If it is *ever* true, it is *always* true. Many mediaeval logicians also held this about conditionals. (Note that, given the Diodorean theory of modality, this means that *all true conditionals are necessary*. Some mediaeval logicians also accepted this consequence.)

b. Philo of Megara

Now let's look briefly at Philo of Megara. He had an altogether different view of conditionals. For Philo, again according to Sextus Empiricus,[53] a conditional is true if and only if it *does* not (present tense) have a true antecedent and a false consequent. This, of course, just amounts to our modern notion of material implication. And Sextus in fact even describes for us the truth table for material implication. He doesn't give it in tabular form, but there is no doubt that this is what he is talking about. On Philo's view, therefore, unlike Diodorus', a conditional may change its truth value. It may be sometimes true and sometimes false. On the whole, the Stoics adopted the Philonean notion of implication in preference to the Diodorean.

c. Chrysippus

Unlike Aristotle, the Stoics developed the study of propositional logic to a high degree. Instead of using letters of the alphabet as variables, they used ordinal numbers. Thus, instead of talking about *p* and *q* as we do today, or about α and β as Aristotle had done (for terms), they spoke of "the first" and "the second." These were *propositional* variables.

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neither was nor is able to begin from a truth and end up with a falsehood." This and other relevant passages from Sextus are cited and translated in a convenient appendix to Mates, *Stoic Logic*, pp. 95–112. On references to the *Adversus mathematicos*, see n. 12 above.

[53] Sextus Empiricus, *Adversus mathematicos* VIII.113–114 (*Opera*, Mutschmann, ed., vol. 2, pp. 128–129 — see the Bury translation, vol. 2, p. 297): "For instance, Philo said a hypothetical is true when it does not begin from a truth and end up with a falsehood. Thus a hypothetical is true in three says, according to him, but false in [only] one way. For when it begins with a truth and ends up with a truth, it is true. For example 'If it is day it is light'. When it begins from a falsehood and ends up with a falsehood, it is true again. For example, 'If the earth is flying, the earth has wings'. So too, one beginning from a falsehood and ending up with a truth is also true. For example, 'If the earth is flying, the earth exists'. But in only one way is it false, [namely] when it begins from a truth and ends up with a falsehood, such as with 'If it is day, it is night'. For in the daytime 'It is day', which was the antecedent, is true, but 'It is night', which was the consequent, is false." See also the comment at the end of n. 52 above.

Chrysippus in particular is well known for having taken five propositional inference forms as "indemonstrable" — as primitive or basic. Here they are[54]:

(1) If the first, then the second; but the first; therefore, the second. (This is of course just our familiar *modus ponens*.)

(2) If the first, then the second; but not the second; therefore, not the first. (*Modus tollens*.)

(3) Not both the first and the second; but the first; therefore, not the second.

(4) Either the first or the second; but the first; therefore, not the second. (This presupposes an *exclusive* disjunction. Inclusive disjunction was known but not generally used by the Stoics.)

(5) Either the first or the second; but not the second; therefore, the first. (Disjunctive syllogism.)

On the basis of these five basic inference patterns, Chrysippus went on to demonstrate many other, derived patterns. In fact, it appears that the Stoics claimed that in some sense these five schemata were "complete" insofar as *all* valid inference forms can be reduced to them. The claim appears dubious on the face of it (no it doesn't — it appears just plain *false*), but really we don't know enough about Stoic logic even to be confident what exactly this claim amounted to.

That's enough for now about the doctrines of these men. Let's move on.

D. Late Antiquity

The main differences between Peripatetic logic and Stoic logic were differences of interest and emphasis, differences of focus and style — not primarily substantive disagreements over matters of doctrine. But at the time it appeared otherwise. Perhaps because of their real disagreements in other areas, the later Stoics and Peripatetics saw themselves in partisan terms as holding opposing theories in logic as well. It is perhaps for these partisan reasons that Theophrastus' work on the hypothetical syllogism was never really very influential in the Peripatetic tradition. It may simply have looked "too Stoic."

This attitude led to some pretty alarming things. Some later Peripatetics, for instance, tried the bizarre project of showing that Stoic propositional logic was "really" just disguised syllogistic after all. Later on, an even worse thing happened. Certain broad-minded people, in an ecumenical spirit, tried to reconcile the opposing camps by showing that their two styles of logic *were really the same thing*. In other words, propositional logic and quantification theory are really the same in the end!

[54] I am relying on Mates, *Stoic Logic*, particularly Ch. 5, throughout this discussion. See also Frede, *Die stoische Logik*.

As you can tell, we are no longer talking about one of Bocheýski's three "peak" periods in the history of logic. We are in a period of logical decline — not to say "torpor" — a period of derivative, eclectic work by people who didn't really know what they were talking about. In fact, after Chrysippus, there wasn't much of any major logical importance done in Greek ever again.

Nevertheless, during this period of late antiquity there were a number of authors who did serve to *transmit* some of the ancient logical doctrine to the Latin Middle Ages. You should at least know the following names:

(1) Cicero (106–43 BC). He introduced many Latin translations for technical Greek terms. His vocabulary is not always the one that was adopted in the end; but he did make it possible for the Latin world to talk about logical matters — and, for that matter, philosophical matters generally — in a language that had not previously had *any* real vocabulary to do it with. He also wrote a *Topics* that had some influence in the Latin logical tradition later on. It is quite different from Aristotle's work of the same name. In addition, Cicero talks about Stoic logic on several occasions, and so is one of the precious few sources for our knowledge of that.[55]

(2) Apuleius, who wrote a *De interpretatione* in Latin as the third book of his *De dogmate Platonis* (= *On Plato's Teaching*), sometime in the second century AD.[56] He too is one of our sources for the Stoics.

(3) Then there is the Greek author Galen (129–c. 199 AD — all these dates will be AD from now on),[57] who is primarily known for his medical writings. Nevertheless, he also wrote an *Introduction to Logic* that still survives and is of some interest.[58] Galen was of the opinion that the study of medicine should include a thorough grounding in mathematics and logic.[59] This salutary advice was taken to heart

[55] See, for example, n. 48 above.

[56] Edited and translated in Londey and Johanson. This *De interpretatione* is also sometimes called the *De philosophia rationali* (= *On Rational Philosophy*). Its authenticity was rejected in Kneale and Kneale, *The Development of Logic*, p. 182. (They are not the only ones to have doubted it.) Nevertheless, the view accepted nowadays seems to have been given by Sullivan, *Apuleian Logic*, pp. 9–14. He reviews the question carefully and decides there is no good reason to doubt the attribution to Apuleius. Kneale and Kneale wrote in 1962, while Sullivan's book was published in 1967. Ebbesen, "Ancient Scholastic Logic As the Source for Medieval Scholastic Logic," p. 106, testifies that Sullivan's conclusion still stands. Londey and Johanson agree, but add further arguments (pp. 11–19).

[57] On Galen, see Gilbert, "Galen."

[58] There is an English translation by John Spangler Kieffer. See Galen, *Galen's Institutio Logica*.

[59] The view is perhaps not so odd as it sounds at first. Galen wanted medicine to be a *science*, a theoretically organized discipline, not just an *art*, a more or less haphazard collection of

and actually put into practice in the Arab world[60] and, through the Arabs, later on in the Latin West. It is for this reason that today one often finds mediaeval logical manuscripts and copies of early printed editions of mediaeval logical works in various old medical libraries.[61] You will sometimes still hear it said that Galen was the one who "discovered" the fourth figure of the Aristotelian syllogism. But in fact he held there are three and only three figures.[62]

(4) In the late second and early third century, we have Sextus Empiricus, whom we have met several times already. He wrote in Greek, and is our best source of information about Stoic logic — and lots of other things.[63]

(5) Also Alexander of Aphrodisias (fl. c. 200), one of the all-time great commentators on Aristotle. He too wrote in Greek.[64]

(6) Porphyry of Tyre (c. 232–before 306),[65] the pupil and biographer of Plotinus, wrote a work in Greek called *Isagoge* (= *Introduction*), which was intended as an introduction to Aristotle's *Categories*. This work was destined to have a tremendous influence later on in the Latin Middle Ages — mainly with respect to the problem of universals. But, since it was an introduction to what was regarded as a *logical* work of Aristotle's, it was read in that light as well.[66]

Note that, with the exception of Cicero and Apuleius, all the works mentioned so far were in Greek — as, of course, were the original writings of the classical logicians themselves, both Aristotelians and Stoics. Now Greek gradually came to be forgotten in the Latin West as education declined, so that later Latin authors had to rely on translations and secondary reports for their knowledge of ancient logic.

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practical skills. Think of the connection we still draw today between logic and the philosophy and methodology of science. For a discussion, see Frede, "On Galen's Epistemology."

[60] See Rescher, *The Development of Arabic Logic*, pp. 16, 38, 40, 53.

[61] Perhaps the influence of Galen is still with us; to this day, the School of Nursing at Indiana University requires a course in elementary logic of all its students. This is a practice for which I can find no earthly reason whatever, if not the wise influence of Galen.

[62] The point is discussed in Kneale and Kneale, *The Development of Logic*, pp. 183–184. They also provide a plausible account of how this scurrilous story arose. See also Lejewski, "Ancient Logic," p. 520, and ukasiewicz, *Aristotle's Syllogistic*, pp. 38–40.

[63] On Sextus generally, see Hallie, "Sextus Empiricus."

[64] On Alexander, see Lloyd, "Alexander of Aphrodisias."

[65] See Lloyd, "Porphyry." He says (p. 411) Porphyry "died some time in the first six years of the fourth century."

[66] There is a translation by Edward W. Warren in Porphyry, *Isagoge*. But I have produced my own translation, which of course I like better. See Spade, *Five Texts on the Mediaeval Problem of Universals,* pp. 1–19.

Among these Latin translators and "transmitters," you should know the following names:

(7) Marius Victorinus, in the fourth century. Victorinus was a neo-Platonist who influenced Augustine. He wrote Latin translations of Aristotle's *Categories* and *De interpretatione,* and of Porphyry's *Isagoge.* In addition, he wrote some treatises of his own, including a *Commentary on Cicero's Topics,* an *On Hypothetical Syllogisms,* and an *On Definitions.* The last is the only one to have survived to the present day. Victorinus seems to have had little direct influence on the main Latin logical tradition, although perhaps he cannot be ignored.[67]

(8) Then there is St. Augustine (354–430), arguably the most important and influential thinker of all time — although not in logic especially. There is a little work called *De dialectica* attributed to him, although there has been some doubt about its authenticity. The work is of no great theoretical significance, but it *is* interesting for its evidence of Stoic influences. There is a recent Latin edition and English translation of it.[68] There is also a work called *The Ten Categories* (= *Decem categoriae*) that was once attributed to Augustine, but it is a reworked translation of a Greek compendium of Aristotle's *Categories*. It comes from the late fourth century.[69]

(9) In the late fifth century, we come to one Martianus Capella, who wrote highly allegorical (and, alas, now sadly neglected) *On the Marriage of Philology and Mercury* which contains a Book IV "On the Art of Dialectic." This is *really* wild stuff, but nevertheless it served as one of the few precious sources of information for later people.[70]

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[67] On Victorinus, see Hadot, "Marius Victorinus," and Hadot's "Introduction" to Marius Victorinus, *Traités théologiques sur la Trinité*.

[68] See Augustine, *De dialectica*, Pinborg, ed., & Jackson, trans.

[69] See Ebbesen, "Ancient Scholastic Logic as the Source of Medieval Scholastic Logic," p. 106, and the reference in n. 13 there. There is a critical edition of this text in the series *Aristoteles Latinus*, vol. I.1–5. The text has not been translated into English, so far as I know.

[70] The critical edition is by James Willis. There is an English translation in Stahl, *Martianus Capella and the Seven Liberal Arts*, vol. 2.

E. Boethius

The first really important figure in mediaeval logic is Boethius (c. 480–524/525).[71] Boethius was an extremely powerful and wealthy man, and held an office in the Roman government of his day loosely comparable to that of "Prime Minister" today. This is the same Boethius who was later jailed for treason (he claimed he was framed) and wrote the famous *Consolation of Philosophy* right before he was executed.

Boethius knew Greek quite well, and set himself the impressive goal of translating all of Plato and all of Aristotle into Latin, writing commentaries on all that material, and then writing a work showing that they really said the same thing.[72] Unfortunately, he did not live to complete this lofty task.

In fact, except for the first half of the *Timaeus*, which was well known in the twelfth century, and except for a few other translations that had almost no circulation whatever, the Middle Ages had no *direct* knowledge of Plato at all. Almost everything people knew about Plato in the Middle Ages was second-hand. It wasn't until the Renaissance that the whole Platonic corpus was available to the Latin world. In particular, Boethius himself appears not to have translated *any* Plato, despite his good intentions.

He did, however, translate[73]:

(1) Aristotle's *Categories*.[74]

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[71] I give the standard (although rather indefinite) date for his death. But Coster, *The Iudicum Quinquevirale,* pp. 53–54, argues plausibly that it occurred in 526. The exact date is of some importance for figuring out the circumstances of Boethius' death, but is not crucial for us.

[72] See Boethius, *Commentarii in librum Περὶ ἑρμηνείας Aristotelis pars posterior*, Meiser, ed., p. 79 line 9–p. 80 line 6: "If the more powerful favor of divinity grants it to me, this is [my] firm purpose: Although those people were very great talents whose labor and study translated into the Latin tongue much of what we are now treating, nevertheless they did not bring it into any kind of order or shape or in its arrangement to the level of the [scholarly] disciplines. [Hence I propose] that I turn all of Aristotle's work — [or] whatever [of it] comes into my hands — into the Latin style and write commentaries in the Latin language on all of it, so that if anything of the subtlety of the logical art was written down by Aristotle, of the weightiness of moral knowledge, of the cleverness of the truth of physical matters, I will translate it and even illuminate it with a kind of 'light' of commentary. [Then,] translating all of Plato's dialogues or even commenting [on them], I will bring them into Latin form. Once all this is done, I will not fail to bring the views of Aristotle and Plato together into a kind of harmony and show that they do not, as most people [think], disagree about everything but rather agree on most things, especially in philosophy."

[73] The Latin texts of Boethius' logical works are all published in Migne, ed., *Patrologiae cursus completus … series latina*, vol. 64. (I won't bother to cite Migne separately for each work listed below.) The texts there should be used with caution. I have referred below to later and more reliable editions where I know of them.

[74] Edited in *Aristoteles Latinus*, vol. I.1–5. Two redactions of Boethius' translation are edited there, together with other mediaeval translations. (In general, the various volumes of the *Aristoteles Latinus* often contain several versions of a given text.)

(2) Aristotle's *De interpretatione*,[75] and
(3) Porphyry's *Isagoge*.[76]

Note that these are the same three texts already translated by Victorinus a century or so earlier. It is important to realize that these three texts are the *only* original texts of Greek logic — in fact, almost the only original texts of Greek *philosophy* as a whole — that were generally available to the Latin West until the twelfth century. This is a tremendously important fact for the history of Western thought.

Boethius also seems to have translated the other works in the *Organon* (except perhaps for the *Posterior Analytics*), but the fate of those translations is obscure; they did not circulate widely until much later.[77]

In addition to his translations, Boethius wrote a number of logical treatises of his own. These are, first of all, a commentary on Aristotle's *Topics*, which is no longer extant. There may have been a commentary on the *Posterior Analytics*, but if so it has not survived and did not have any influence.[78] The same goes for a possible (incomplete) commentary on the *Prior Analytics*.[79]

More important were[80]:

(4) A commentary on the *Categories*.
(5) *Two* commentaries on the *De interpretatione*.[81] After he had finished his first commentary, Boethius later decided he had more to say.
(6) *Two* commentaries on Porphyry's *Isagoge*.[82] The first of these commentaries was "based on" Victorinus' translation of the work, but the second one was based on Boethius' own translation. It is not clear just how much of Victorinus is preserved in the first commentary.
(7) A work called *Introduction to Categorical Syllogisms*, in two books.

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[75] Edited in *Aristoteles Latinus*, vol. II.1–2. Also edited in Boethius, *Commentarii in librum Περὶ ἑρμηνείας Aristotelis pars prior*, Meiser, ed., pp. 3–28.

[76] Edited in *Aristoteles Latinus*, vol. I.6–7. See also Boethius, *In Isagogen Porphyrii commenta*, Brandt, ed., which contains Boethius' translation interspersed with his commentary.

[77] See Dod, "Aristoteles Latinus," pp. 53–54. The texts are edited in *Aristoteles Latinus*, vols. III.1–4 *(Prior Analytics)*, V.1–3 *(Topics)*, and VI.1–3 *(Sophistical Refutations)*. The question whether Boethius translated the *Posterior Analytics* is perhaps not yet finally settled. De Rijk, "On the Chronology of Boethius' Works on Logic," II, p. 154, says there are "serious grounds" to say yes; but Dod, "Aristoteles Latinus," p. 53, has doubts.

[78] See Ebbesen, "Manlius Boethius on Aristotle's *Analytica Posteriora*."

[79] See the discussion in Obertello, *Severino Boezio*, vol. 1, pp. 230–232.

[80] See Chadwick, *Boethius: The Consolations of Music, Logic, Theology and Philosophy*; Gibson, *Boethius: His Life, Thought, and Influence*; and Obertello, *Severino Boezio*.

[81] Critical edition in Boethius, *Commentarii in librum Aristotelis Περὶ ἑρμηνείας,* Meiser, ed.

[82] Critical edition in Boethius, *In Isagogen Porphyrii commenta*, Brandt, ed.

(8) A work *On Categorical Syllogisms*. The relation between this work and the preceding one is not certain. It has been conjectured that the *Introduction to Categorical Syllogisms* is an earlier version of *On Categorical Syllogisms*, either in whole or in part.[83]

(9) A work *On Division*.[84]

(10) *On Hypothetical Syllogisms*.[85]

(11) A Commentary on Cicero's *Topics*.[86] (Cicero's *Topics* is quite a different thing from Aristotle's work of the same name, as the following entry will show you.)

(12) *On Topical Differences*.[87] That is, on the differences between Aristotle's *Topics* and Cicero's *Topics*.)

The translations **(1)–(3)**, and Boethius' own original works **(4)–(12)**, together constitute what later came to be called the *"logica vetus"* (= "Old Logic"). Some of the works were more influential than others. But basically, *everything* the Middle Ages knew about logic was contained in these books, up to the middle of the twelfth century.

F. The Eleventh and Twelfth Centuries

After Boethius, basically nothing happened in logic — or at least nothing very noteworthy and good — until the eleventh century. Historians have noted that, with the turn of the millennium in 1000, there was a kind of "reawakening" of Europe. The Germanic tribes had settled down, the Vikings had pretty much stopped marauding and had become respectable. Trade began to pick up, cities began to grow, cathedrals began to be built. Culture began to revive too. There was a new interest in law and theology, and particularly in the use of reasoning or dialectic in theology.

Theology was in effect being reshaped during this period. It became less and less a matter of Scriptural exegesis, and more and more a matter of theoriz-

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[83] See the discussion in De Rijk, "On the Chronology of Boethius' Works on Logic," I, pp. 6–44. De Rijk (p. 31) regards the two as distinct works.

[84] See Loe, ed., *B. Alberti Magni ord. praed. Commentarii in Librum Boethii de divisione*, which contains Boethius' text as well as Albert the Great's commentary on it. (Albert the Great lived from sometime before 1200 until 1280. He was a teacher of Thomas Aquinas. We will not have occasion to talk about him in this book, although he is an important and interesting figure in other respects.) Translated in Kretzmann and Stump, trans., *The Cambridge Translations of Medieval Philosophical Texts*, vol. 1, pp. 11–38. There is also an Italian translation by Pozzi in Boethius, *Trattato sulla divisione*.

[85] Critical edition, with Italian translation and commentary, in Boethius, *De hypotheticis syllogismis*, Obertello, ed.

[86] Edited by Orelli and Baiertus in Boethius, *In Ciceronis Topica*. Book I is also edited in Boethius, *A Critical Edition of Boethius' Commentary on Cicero's Topica Bk. I*, Perdamo ed. The whole text is translated by Stump in Boethius, *Boethius's In Ciceronis Topica*.

[87] English translation by Stump in Boethius, *Boethius's De topicis differentiis*.

ing.[88] St. Anselm (1033–1109), for example, was an important figure in this reshaping process. This was not, of course, a change that took place without resistance.

Along with the new interest in the use of dialectic in theology, there came about also a new interest in dialectic in its own right. Anselm himself wrote a few logical things of some interest.[89]

But the first really systematic logician of this period was Peter Abelard (1079–1142).[90] Abelard was an *astonishingly* rich and original thinker — in logic and in lots of other areas as well. His achievement is all the more impressive once we realize that he basically had nothing more to work with than everyone else had had for the preceding 500 years: Aristotle's *Categories* and *De interpretatione* and Porphyry's *Isagoge*, together with the commentaries and other logical works of Boethius.

But shortly after Abelard — and in fact, even while Abelard was still living — new translations began to appear in Latin as part of the general "revival" of culture in the Latin West. In particular, the remaining works of Aristotle were gradually translated and began to circulate. Among the first of these was the rest of the *Organon*: The *Prior* and *Posterior Analytics*, the *Topics* and the *Sophistic Refutations*. Some of these had been previously translated by Boethius, but his translations had not circulated very widely and were effectively unknown.

Collectively, these "new" logical works of Aristotle came to be called the *"logica nova"* (= "New Logic"), in contrast to the *"logica vetus"* or "Old Logic," which included everything that had been previously generally available.

G. The Sophistic Refutations

I want to focus now on the Aristotle's *Sophistic Refutations*, the last work in the usual ordering of the *Organon*. This little work began to circulate in Latin translation sometime after about 1120,[91] and its appearance was a *crucial* event in the history of mediaeval logic. Here's why.

Although the early Middle Ages did not have the *Prior* and *Posterior Analytics* in a generally available form, they knew about the syllogistic second-hand,

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[88] See, for instance, Evans, *Old Arts and New Theology*.

[89] Surely the most philosophically interesting of them is his dialogue *De grammatico*, which has been studied repeatedly by Desmond Paul Henry. See Henry, *The De grammatico of St. Anselm*; *The Logic of St. Anselm*; and *Commentary on De grammatico*. We will discuss this little dialogue later. (See Ch. 7, pp. 198–204, below.) Of less interest perhaps, but still definitely not to be ignored, are the "Philosophical Fragments" published by Schmitt, *Ein neues unvollendetes Werk des hl. Anselm von Canterbury*, and translated in Hopkins, *A Companion to the Study of St. Anselm*, Appendix I, pp. 215–245. The "Fragments" concern modal notions. They appear to have had no influence whatsoever.

[90] There is a large and deservedly growing literature on Abelard. Since he is really before the time we will be mainly discussing in this book, I won't say much about him. But if you want to know more, see Tweedale, "Abelard and the Culmination of the Old Logic" and the references there.

[91] See Dod, "Aristoteles Latinus," p. 46.

through the writings of Boethius and others. When they finally did get the actual text of the *Prior Analytics*, there wasn't much they could do with it. Aristotle had pretty much done it all. The syllogistic was — to use Kant's phrase — a "closed and completed body of doctrine." There was, of course, the stuff on the *modal* syllogistic in the later parts of the *Prior Analytics*. But the mediaevals were in no position to do much with that. (In fact, even today no one is *really* sure what Aristotle was doing there.) As for the *Posterior Analytics*, it was so difficult and obscure that it wasn't until a somewhat later generation that the mediaevals began to come to terms with it. And the *Topics* is such a random grab-bag that there wasn't much to be done with it either.[92]

But then there was the *Sophistic Refutations*. That was a completely different situation altogether. The *Sophistic Refutations* is a little "catalogue" of various kinds of fallacies and what to do about them. If you have ever looked at the work, it is obvious that it is very sketchy and incomplete. There are lots of fallacies that are not treated, those that *are* treated there could have been organized differently, and so on.

Unlike the *Posterior Analytics*, which took a lot of getting used to, the *Sophistic Refutations* was relatively easy to get into and to understand. There was nothing especially obscure about it. And unlike the *Prior Analytics*, there was obviously a lot of work that remained to be done. Moreover, the discovery and avoiding of fallacies was *very* important in theological matters, where you had to keep straight what you were saying about the Trinity, and about the two natures but one person in Christ, and so on. In short, the *Sophistic Refutations* was tailor-made for the twelfth century to go to work on. And that is exactly what happened.[93]

The *Sophistic Refutations*, and the study of fallacy that it generated, produced a whole new logical literature. There was, for instance, the *sophismata* literature — as we find illustrated in Buridan's *Sophismata*, one of the works we will be discussing later on. And the theory of "supposition," which we will also be discussing at *great* length later on, developed out of the study of fallacies.[94]

In fact, whole new kinds of treatises came to be written on what were eventually called "the properties of terms" — semantic properties that were important in the study of fallacies. These treatises, and the logic contained in them, are the peculiarly mediaeval contribution to logic. It is primarily on these topics that mediaeval logicians exercised their best ingenuity. It's *not* all about warmed-over syllogistic, or about the square of opposition. The exciting new work was elsewhere, and that is the topic of this book.

Such "new" treatises, and the logic contained in them, came eventually to be called the *"logica moderna"* (= "Modern Logic") or *"logica modernorum"*[95]

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[92] Actually, that isn't quite true. What was done with it is that it was gradually absorbed into the theory of consequence. See Stump, "Topics: Their Development and Absorption into Consequences."

[93] The most important work on this period is undoubtedly De Rijk, *Logica Modernorum*, especially vol. 1.

[94] See De Rijk, *Logica Modernorum*, especially vol. 2.

[95] Hence the title of De Rijk's monumental study.

(= "Logic of the Moderns"), or "Terminist" logic — because they talked so much about the "properties of terms."

These developments began to take place in the middle- to late-twelfth century, and continued to the end of the Middle Ages.

H. The Thirteenth Century

In the thirteenth century, the *sophismata* literature began to develop more and more. In addition, there are four especially important authors, all of them active around the middle of the thirteenth century, whom you should know about:

(1) Peter of Spain, who wrote an important work generally called *Summulae logicales* (but called simply *Tractatus* by its modern editor), probably sometime in the early 1230s.[96] It was used as a kind of handbook in certain later university contexts. John Buridan, for instance, used it as the basis for his own *Summulae*. (We will meet Buridan soon.) Peter also wrote a *Syncategoremata*.[97] Later on in life, Peter of Spain rose all the way to the papacy, becoming Pope John XXI. He died in 1277 when, after the completion of some new construction he had ordered at the papal quarters in Viterbo (not Rome at that time), he was in residence there, minding his own business, and the roof collapsed on him.[98]

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[96] On the date of the work, see De Rijk's edition, pp. xxxvii and lvii. On its title, see *ibid*., pp. xli–xlvi. I personally question whether the name *'Tractatus'* (= *Treatise*, or perhaps plural *Treatises*) was ever really the title of this work. It seems to me equally plausible that it was just a kind of generic description. The work has been translated under the title *Language in Dispute* by Francis Dinneen. But readers of that translation may want first to consult E. J. Ashworth's review of it.

[97] Edited by L. M. De Rijk, with an English translation by Joke Spruyt. They give the title as "*Syncategoreumata*," which does preserve one authentically mediaeval spelling, but seems to me to have little else to recommend it.

[98] This happened on May 14th. He lingered for about a week before he finally died of his injuries on the 20th. The story is found in Ricobaldo of Ferrara's *Historia Pontificum Romanorum*, edited in Muratori, *Rerum italicarum scriptores*, vol. 9, col. 181 (but I have not seen this edition, and am translating from the quotation in De Rijk's introduction to Peter of Spain, *Tractatus*, p. xl, n. 7): "While he was rejoicing in the span of the long life he bragged would continue into the future [he was about seventy-five years old at the time], and while he was reading in a new room he had prepared in the palace at Viterbo, the palace collapsed with him in it. He survived bruised and all alone for five days among the timbers and stones. Fortified by the sacraments of the Church, he passed away from this world and was buried at the church of Saint Lawrence in Viterbo." Another, even less flattering version of the story is told in an anonymous *Lives of the Popes* preserved in a fifteenth-century Bergamo manuscript (Biblioteca Civica, Delta IV, 34), quoted in De Rijk's introduction to Peter of Spain, *Tractatus*, p. xli, n. 7: "A stupid man, he promised himself a long life and for a long time proclaimed that he would win out over everyone. But behold! While he was throwing this foolishness around, a certain new room he had built in the palace at Viterbo suddenly collapsed. He was found among the timbers and stones, [and] after receiving all the sacraments of the Church he died seven days after this cave-in, during the eighth month of his pontificate." (I assume the difference between this and the preceding account on

(2) Roger Bacon, who wrote a *Summulae dialectices* (using the Greek form of the genitive) around 1250.[99]

(3) Lambert of Auxerre, who wrote a *Logica*, probably between 1253 and 1257.[100]

(4) William of Sherwood, who wrote an *Introduction to Logic* and a *Syncategoremata* in the middle of the thirteenth century. The dates are hard to pin down any more precisely than that.[101]

These four thirteenth-century terminist authors are sometimes known as *summulists*, because they produced compendia surveying the *whole* of logic known in their time. Such works are known as *"summae"* (singular = *'summa'*), or *"summulae"* (which just means "little *summae*"). Sherwood's *Introduction to Logic* counts as a *summa*, even though it doesn't have that title.

In connection with Peter of Spain, I should digress for a moment on an important, but by now *thoroughly* discredited, theory about the origins of mediaeval logic.

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whether it was five or seven days depends on whether you count the first and last day as complete days. It is unlikely that people of the day were uncertain about exactly when a pope died, and it is equally unlikely that they failed to notice just when the roof collapsed.) You must of course have a ready supply of these droll stories in case you ever have to lecture on this material to easily bored students. Here is some more of the tale: Apparently the fatal room was some kind of "observatory." It seems that Peter, in addition to logic, had an interest in astronomy and other scientific matters — including medicine. (Note again the linkage between logic and medicine. See p. 32 above on Galen's influence in this regard. Note also that both accounts remark that Peter boasted that he would continue to live for a long time, even though he was already pretty old.) As often happened to such people, this earned for him the suspicion of dabbling in magic, astrology and other wizardry. Moreover, Peter seems somehow to have acquired an undeserved reputation for being unsympathetic to the concerns of the various religious orders (monks and friars, as distinct from the diocesan clergy). The combination of all this scurrilous gossip is probably what is responsible for the hints in the above accounts that Peter got exactly what he deserved, since he was arrogant and stupid and had prophesied (no doubt by illicit forms of divination) a continued long life for himself. On all this, see the biography of Peter in Mann and Hollnsteiner, *The Lives of the Popes*, vol. 16, pp. 31–56. The volume was published in 1932 and reports (p. 54) that traces of Peter's "observatory" could still be seen in Viterbo at that time.

[99] Edited in Alain de Libera, "Les *Summulae dialectices* de Roger Bacon."

[100] Lambert's *Logica* has never been translated as a whole into English, or (as far as I know) into any other language. It has been edited by Franco Alessio as *Logica (Summa Lamberti*). The portion on the "properties of terms" had been translated in Kretzmann and Stump, *The Cambridge Translations of Medieval Philosophical Texts*, vol. 1, pp. 102–162. On the date of the work, see De Rijk, "On the Genuine Text of Peter of Spain's *Summule logicales*," IV, pp. 160–162.

[101] Other works have sometimes been attributed to Sherwood, but in my judgment not very persuasively. On the dates of Sherwood's writings, see De Rijk, "Some Thirteenth Century Tracts on the Game of Obligation," III, pp. 26 & 31–32. Both the *Introductiones* and the *Syncategoremata* have been critically edited and translated into English: William of Sherwood, *Die Introductiones in logicam des Wilhelm von Shyreswood*, Grabmann ed.; "William of Sherwood, 'Introductiones in logicam'," Lohr *et al.,* ed.; "The *Syncategoremata* of William of Sherwood," O'Donnell, ed.; *William of Sherwood's Introduction to Logic,* Kretzmann, trans.; and *William of Sherwood's Treatise on Syncategorematic Words,* Kretzmann, trans.

Carl Prantl, an important mid-nineteenth century German historian, wrote a history of logic called *Geschichte der Logik im Abendlande*. Although in that history Prantl devoted a great deal of time to mediaeval logic, and provided quotations that are still useful from a large number of authors, he was by no means sympathetic to the Middle Ages. He thought it was a period of darkness, gloom and despair, and said so. In fact, it is not too strong to say that Prantl *hated* the Middle Ages!

In particular, Prantl had a theory about the origins of terminist logic in the thirteenth century. He held that terminist logic arose from *three* sources: **(a)** the recovery of the texts of Aristotle, **(b)** Byzantine influences, and **(c)** Arabic influences.[102]

His thesis about Byzantine influence rested on a peculiar theory about Peter of Spain's *Summulae logicales*. For there existed (and still does exist) a Greek version of what appeared to be the same work. Prantl attributed this Greek work, entitled *Synopsis*, to a certain Byzantine author named Michael Psellus (b. 1020), and argued that Peter of Spain's *Summulae* was nothing more than a translation of Psellus' work. The moral of the story, of course, was one Prantl was only too fond of making, namely, that there was nothing in mediaeval Europe that wasn't derivative or second-rate.

Prantl's thesis was *immediately* attacked — and *definitively* refuted once and for all — at the end of the nineteenth century. It was shown that the *Synopsis* Prantl was talking about was in fact *not* an eleventh century work by Michael Psellus at all, but rather a *fifteenth* century work by one George Scholarius (1400–1464), and that, far from Peter of Spain's work's being a translation of the *Synopsis*, it was just the other way around: the *Synopsis* was in fact a translation of Peter of Spain!

I tell you this because you sometimes still see secondary sources, for the most part by Soviet and Eastern European authors, that don't appear to have heard the news (now a century old), and *still* repeat Prantl's thesis as though it were a view that could be taken seriously. For example, MIT press some time ago published an English translation of a work by the Russian author N. I. Styazhkin, entitled *History of Mathematical Logic from Leibniz to Peano*, which contains an introductory chapter on the Middle Ages. Whatever virtues the rest of the book may or may not have, that first chapter is simply not to be taken seriously. Among other defects — and there are lots of them — it peddles Prantl's thesis without any signs of shame or remorse.

Likewise, not long ago there appeared a four-volume English translation of a *History of Logic* by the Romanian author Anton Dumitriù. It too repeats Prantl's thesis as though it were true, even though Dumitriù knew and used Kneale and Kneale's *The Development of Logic,* which definitely knew better.[103]

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[102] On all this, see De Rijk, *Logica Modernorum*, vol. 1, p. 18.

[103] See Kneale and Kneale, *The Development of Logic*, p. 234. See my review of Dumitriù for these and other horrors. For a more realistic assessment of the relation between Byzantine and Latin mediaeval philosophy, see Ebbesen, "Western and Byzantine Approaches to Logic."

But now back to the thirteenth century. Thomas Aquinas (1224/1225–1274) is, I am afraid, of no real consequence to our topic. Early on, he did write a treatise on fallacies, and another one on modal propositions (actually, nothing more than a short letter). But there is nothing especially original or surprising in either of those works. He also produced an incomplete commentary on Aristotle's *De interpretatione*. But again, there is little in it for our purposes, although it is of interest for students of Thomas more generally.[104]

At the end of the thirteenth century, the great John Duns Scotus (c. 1265–1308) wrote a number of works on logic, most of which have not been investigated with the attention they deserve. There are also several important and *very* interesting works from the late thirteenth century that were falsely attributed to Scotus and published in the seventeenth century by Luke Wadding among the authentic works. These are nowadays referred to collectively as the works of the "Pseudo-Scotus," even though they are certainly not all by the same man.[105]

After about 1270, something very odd happened. No one really knows why, but the "terminist" logic that had prevailed on both sides of the English Channel up to that point went into a kind of hibernation. This was most pronounced on the Continent, where terminist semantic theory was virtually *replaced* by a different kind of semantics altogether, called "speculative grammar." Speculative grammar regularly appealed to what it called "modes of signifying," and is therefore also sometimes called "modism." In England, modism never especially caught on, and terminist logic and semantics survived. But there appears to have been little innovative work done there at the end of the thirteenth century. There are no important new *Summulae* of logic, for instance.[106]

I. The Fourteenth Century and Thereafter

This situation continued until the early fourteenth century, when — bang! All of a sudden, terminist-style semantic theory woke up again. This happened as

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[104] I will have occasion to cite this work briefly in Chapter 3 below. For information on Aquinas' writings, including available editions and translations, see Weisheipl, *Friar Thomas d'Aquino*, pp. 355–405 ("A Brief Catalogue of Authentic Works"). For the *Commentary on the De interpretatione*, see item #36 (pp. 374–375); for the *On Fallacies*, see item #57 (p. 386); and for *On Modal Propositions*, see item #68 (p. 392).

[105] On Pseudo-Scotus, see McDermott, "Notes on the Assertoric and Modal Propositional Logic of the Pseudo-Scotus." The term 'Pseudo-Scotus' isn't used indiscriminately for the author of just *any* old work that is falsely attributed to Scotus. In some cases, we know who the author really was.

[106] Jan Pinborg is the main authority on these matters. See his "The English Contribution to Logic before Ockham," and "Speculative Grammar." Also Libera, "The Oxford and Paris Traditions in Logic," and Ebbesen, "The Dead Man Is Alive." On speculative grammar and the modist tradition itself, see Pinborg, *Die Entwicklung der Sprachtheorie im Mittelalter*, and Pinborg, "Die Logik der Modistae." Some of the judgments made above need to be qualified; the necessary qualifications are made in the works just cited. As already mentioned, the writings of John Duns Scotus during this period deserve further study, but such an investigation would probably not affect the particular claims made here. We will not be discussing speculative grammar very much in this book, mainly because I am incompetent in that area.

early as 1302 in England, when Walter Burley (= Burleigh), began to write important new works in the terminist tradition.[107] A little later (perhaps in the 1320s or so), John Buridan began doing the same thing in Paris.[108] Furthermore, when terminist semantic theory awoke from its "long winter's nap" in the early-fourteenth century, it was in many respects importantly different from what it had been earlier.[109] It is the logic and semantic theory after this reawakening that is the topic of this book.

In the early-fourteenth century, there are three main figures who will concern us primarily:

(1) William of Ockham (c. 1285–1347),[110] a nominalist Franciscan author of *tremendous* importance generally — although, oddly, of remarkably *little* influence, at least as far as I can tell, on many particular points of logical theory where you might have expected otherwise. Among his logical works is the big *Summa logicae*, parts of which have been translated into English.[111] His work was done "in connection with" Oxford University. This doesn't mean it was all written there — not by any means. Although he did lecture for a while on theology at Oxford, he went to the London Franciscan house in 1320 to teach and wait for an academic appointment at Oxford that never came. Much of his theoretical writing was done in London.

(2) Walter Burley (or Burleigh, c. 1275–1344/1345), whom we have already met. Burley was some ten years older than Ockham, and was a realist in his metaphysical views. He wrote an important treatise *On the Purity of the Art of Logic*, which appears to have been at least in part a response to Ockham. There are two versions of this work, a

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[107] On Burley, see Martin, "Walter Burley"; Uña Juarez, *La filosofía del siglo XIV*; and Wood, "Studies on Walter Burley."

[108] See Spade, "The Logic of the Categorical," especially pp. 187–188, and the notes there.

[109] Spade, "The Logic of the Categorical," and Spade, "Insolubilia."

[110] See Gál, "William of Ockham," and Gál, "William of Ockham Died *Impenitent* in April 1347." On the tradition that Ockham died instead in 1349, see Brampton, "Traditions Relating to the Death of William of Ockham." For more detail on Ockham's life, see Baudry, *Guillaume d'Occam*; Ghisalberti, *Guglielmo di Ockham*; and Leff, *William of Ockham*. **Important General Note:** In addition to the particular biographical references to late mediaeval authors I will be giving in these footnotes, you should know about the very useful section of "Biographies" toward the end of *The Cambridge History of Later Medieval Philosophy* (pp. 853–892). The entries there give you capsule summaries (a few paragraphs in length) of an author's life and works, together with references to the main primary and secondary literature. If you're just getting started with a particular author, this is an invaluable resource, and the first place to go.

[111] Part 1 is translated in William of Ockham, *Ockham's Theory of Terms*; part 2 in William of Ockham, *Ockham's Theory of Propositions*. I reviewed the former in *Noûs* 12 (1978). I have also translated selections from part 1 of the *Summa logicae* in William of Ockham, *Summa of Logic.*

longer treatise and a shorter one. The first part of the longer one contains material of particular relevance to our study.[112] Burley also wrote a great number of other works that we will discuss as needed — and is a figure who deserves to be studied a lot more than he has been. Like Ockham, Burley's main work was done in England, in connection with Oxford University.[113]

(3) On the Continent, and somewhat later, we have the famous John Buridan (b. 1290s–1304/1305, d. after 1358 and certainly not after 1361) at the University of Paris. The dates of his writings are exasperatingly hard to pin down, but he appears to have written from the 1320s to perhaps as late as 1360.[114] Buridan, like Ockham, was of the nominalist persuasion in metaphysics. His *Sophismata* will be an important source for us. He also wrote a *Summulae* that was used as a textbook in certain European universities later on; we will be discussing this book soon. In addition, he produced an extraordinarily interesting *Consequentiae*, containing the first attempt since Chrysippus at a quasi-axiomatic theory of inference in general.[115]

Buridan spent his entire teaching career in the Faculty of Arts at the University of Paris, and taught many of the foremost thinkers of the next generation on the Continent. Among them were Albert of Saxony (d. 1390), who went on to become the first rector of the University of Vienna.[116] Albert wrote a *Sophismata* and a work entitled *Perutilis logica* (= *A Very Useful Logic*), both of which were printed shortly after the invention of the printing press. We will be referring to his work from time to time below.

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[112] I am preparing a translation of both the longer and the shorter versions of *On the Purity of the Art of Logic* for the series "Yale Library of Medieval Philosophy." In the meantime, consult Walter Burley, *The Longer Treatise On the Purity of the Art of Logic, Tract 1: "On the Properties of Terms."*

[113] But he did teach for a while at Paris. Once again, on Burley generally see Martin, "Walter Burley; Uña Juarez, *La filosofía del siglo XIV*; and Wood, "Studies on Walter Burley."

[114] On Buridan's life and works, see the invaluable study by Faral, "Jean Buridan: Maître ès Arts." On his writings especially, see Faral, "Jean Buridan: Notes." See also Ghisalberti, *Giovanni Buridano*; and Moody, "Jean Buridan." On Buridan's logical writings in general (but mainly the *Summulae*), see Pinborg, *The Logic of John Buridan*. For more recent information on Buridan's life, see the Introduction to Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* pp. xi–xvii.

[115] I call it "quasi-axiomatic" because they're not really *axioms* Buridan (or Chrysippus, for that matter) is using, but *inference rules*. But never mind; the important point is that the presentation is *systematic*, with certain rules' being deduced from others by means of actual stated *proofs*. It really is an impressive work! It is available in a critical Latin edition by Hubien, and in English translation by Peter King. See John Buridan, *Tractatus de consequentiis* and John Buridan, *John Buridan's Logic.*

[116] On Albert, see Heidingsfelder, *Albert von Sachsen*.

Another rather important pupil of Buridan's was Marsilius of Inghen (c. 1330–1396), who went on to become the first rector of the University of Heidelberg.[117]

A contemporary of Buridan in Paris was Gregory of Rimini (c. 1300–1358). His main work was done in the 1340s, his commentary on Book I of the *Sentences* of Peter Lombard in 1342.[118] His importance in logic seems to have been in two areas, the theory of *insolubilia* (= semantic paradoxes like the Liar Paradox) and the theory of *complexe significabilia*. We will discuss the latter at length in Ch. 6 below..

Both in England and on the Continent, the best work in this late-mediaeval period seems to have been before about 1350. In England, after the work of Burley and Ockham, there was a flourishing of logical studies associated with Merton College, Oxford, until around mid-century.[119] These "Mertonians" are especially important in the pre-history of early modern science, and are sometimes called "Calculators" because of the tendency in some of them (although by no means all) to use mathematical techniques to solve problems in natural philosophy.[120] The following are important in logic:

(1) Thomas Bradwardine (c. 1295–1349). Author of a tremendously important *Insolubilia*.[121] Other logical writings have sometimes been attributed to him too, but this is the most important and influential one.[122]

(2) Richard Kilvington (early 14th century – d. 1361). Author of an exceptionally interesting *Sophismata* that shows little

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[117] On Marsilius, see Ritter, *Studien zur Spätscholastic: I. Marsilius von Inghen*.

[118] The *Sentences* of Peter Lombard was a twelfth century theological work that became the standard textbook of theology all over Europe in the thirteenth century and later. All aspiring theology students had to lecture and comment on the *Sentences*. Many of these commentaries have been preserved in manuscript form, and are absolutely crucial sources for an author's views on all sorts of things, philosophical as well as theological. The word 'sentences' in this context is used in something like the modern judicial sense, to mean a "verdict" or "decision" — in particular, a decision on some question raised and discussed (and answered) by Lombard. The *Sentences* is divided into four books, and each book is subdivided into several "distinctions." References to an author's commentary on the *Sentences* are regularly given by book and distinction number, followed by the question or article number or other internal subdivision, depending on the particular author's own style. On Gregory of Rimini, see Gál, "Gregory of Rimini"; Leff, *Gregory of Rimini*; and Trapp, "Augustinian Theology of the Fourteenth Century," "Gregory of Rimini," and "New Approaches to Gregory of Rimini."

[119] To say they were "associated" with Merton is not necessarily to say that they all had official positions there.

[120] See Sylla, "The Oxford Calculators," and references there. See also Weisheipl, "Ockham and Some Mertonians," and "*Repertorium Mertonense*."

[121] Edited in Roure, "La problématique des propositions insolubles." See also Spade, "*Insolubilia* and Bradwardine's Theory of Signification."

[122] On Bradwardine, see Weisheipl, "Ockham and Some Mertonians," pp. 189–195, and Weisheipl, "*Repertorium Mertonense*," pp. 177–183. See also Nielsen, "Thomas Bradwardine's Treatise on 'Incipit' and 'Desinit'"; Green-Pedersen, "Bradwardine (?) on Ockham's Doctrine of Consequence"; and Pinborg, "Opus Artis Logicae."

trace of the mathematical techniques used by other, slightly later "calculators," and is all the more interesting in that respect.[123]

(3) Roger Swyneshed (= Swineshead), pronounced just the way you fear (fl. before 1335, d. c. 1365). Author of an *Insolubilia* and an extremely odd *Obligationes* on a peculiar form of disputation.[124]

(4) William Heytesbury (before 1313–d. 1372/1373). Author of a big *Sophismata*, an interesting *Rules for Solving Sophisms* (= *Regulae solvendi sophismata*) and other works.[125]

(5) Richard Billingham (fl. mid-14th century). Billingham's precise dates are uncertain, but he seems to have written after Heytesbury, and was probably active around 1350. His main logical writing was the tremendously important *Speculum puerorum* (= *Youth's Mirror*), which contains a novel doctrine of "proofs of propositions."[126]

Then, after about 1350, things changed dramatically. It is easy to suppose that the Black Plague, which swept through Oxford in 1349, broke the intellectual back of Oxford University by simply killing everyone off. And, while that is no doubt too simple an explanation,[127] it certainly does appear that a major change took place about then. Oxford logic in the late-fourteenth century appears to be for the most part second-rate. This is not to say it is unsophisticated or sloppy (although much of it is); it is just that the main contributions were made earlier.[128]

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[123] On Kilvington, see the "Introduction" to Kretzmann's translation in Richard Kilvington, *The Sophismata of Richard Kilvington*. In addition to the Latin edition and English translation listed in the *Bibliography* below, see also the many articles on Kilvington by Norman Kretzmann listed in the *Bibliography* to the English translation.

[124] On Swyneshed, see Weisheipl, "Roger Swyneshed, O. S. B." Roger Swyneshed is *not* to be confused with another person, Richard Swyneshed. Many manuscripts and early sources (and for that matter, several quite recent sources) fail to recognize that these are two quite distinct people. See the discussion *ibid*. I have edited and published both Swyneshed's *Insolubilia* and his *Obligationes*.

[125] On Heytesbury, see Emden, *A Biographical Register*, vol. 2, pp. 927–928; Weisheipl, "Ockham and Some Mertonians," pp. 195–199; Weisheipl, "*Repertorium Mertonense*," pp. 212–217. A fair amount of Heytesbury has been translated into English, all of it based on the not altogether reliable 1494 edition. See William Heytesbury: "The Compounded and Divided Senses"; *On Insoluble Sentences*; *On Maxima and Minima*; "Uniform and Nonuniform Motion and the Merton College Mean Speed Theorem"; and "The Verbs 'Know' and 'Doubt'." Heytesbury's *Rules for Solving Sophisms* has a total of six chapters. Of these, Chs. 1–2, 5, and part of Ch. 6 have been translated in the texts just cited.

[126] On Billingham, see Emden, *A Biographical Register*, vol. 1, pp. 188–189; Weisheipl, "*Repertorium Mertonense*," pp. 176–177; De Rijk, "Richard Billingham's Works on Logic." Billingham's *Speculum terminorum* is edited in Maierù, "Lo *Speculum puerorum*." On other texts in this same tradition (some of them attributed to Billingham), see De Rijk, "Another *Speculum puerorum*"; De Rijk, "The Place of Billingham's *Speculum puerorum*"; and De Rijk, *Some 14th Century Tracts on the Probationes Terminorum.*

[127] See Courtenay, "The Effect of the Black Death on English Higher Education."

[128] See Ashworth and Spade, "Logic in Late Medieval Oxford" for details.

By the fifteenth century, we can't honestly say that English logic is even second-rate any more; it is simply *dead*. We know of only a few pathetic and insignificant figures around the turn of the fourteenth and fifteenth centuries, and after that — nothing.[129]

In the fifteenth century, several earlier treatises (often in heavily revised redactions) gradually came to precipitate into two loose collections of works used for teaching purposes, one collection at Oxford and another at Cambridge. These were later called the *Libelli sophistarum* (= *Little Books for Arguers*). Both were printed in early editions in the late fifteenth and early sixteenth centuries.[130] On the whole, the quality of logic exhibited in these *Libelli* is appallingly low.[131] And although our knowledge of this period is still not very complete, there is little reason to expect that additional research will make the period look much better.[132]

There is perhaps an exception to this bleak picture. During the so called "Great Schism" (1378–1418) — when the various political and ecclesiastical factions of Europe aligned themselves behind either the Avignonese or the Roman claimants to the Papacy (after the Council of Pisa in 1409, there was yet a third competing line of Popes) — Oxford became an important destination for many Italian scholars who went west to study, particularly those who belonged to the religious order of the Hermits of St. Augustine (the so called "Austin Friars"). Paris, the other predominant academic center at the time, had sided with the wrong faction, as far as the Austin Friars were concerned. Among the Augustinians who went to Oxford during this period was one Paul of Venice (1369–1429), sometimes called Paul Nicolettus of Venice to distinguish him from other Pauls of Venice who were running around then (including an older cousin, Paul Francis of Venice, who was at Oxford at the same time). Paul of Venice (the younger cousin) seems to have absorbed much knowledge of English logic while he was at Oxford. When he returned to Italy, he took his knowledge with him. Although there were other influences too, there is no doubt that Paul of Venice was an important factor in the flourishing of logical studies in Italy in the fifteenth century.[133]

On the Continent, things weren't as bad as they were in England. It is still true that the best work was probably done before the mid-fourteenth century. But other quite respectable people produced quite respectable work later on. I have already mentioned, for example, Albert of Saxony and Marsilius of Inghen.

In 1372, the Parisian master Peter of Ailly (1350–1420/1421) wrote a very interesting pair of treatises, usually treated as one and published in the late-fifteenth century under the title *Concepts and Insolubles*. The work concerns the

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[129] For what little we do know, see Ashworth and Spade, "Logic in Late Medieval Oxford" again, and the references there.

[130] On the *Libelli sophistarum*, see De Rijk, "*Logica Cantabrigiensis*" and "*Logica Oxoniensis*"; and Ashworth, "The 'Libelli Sophistarum'."

[131] For a striking example, see Spade, "Richard Lavenham and the Cambridge Logic."

[132] Fletcher, "The Teaching and Study of Arts at Oxford" certainly gives us little hope. Fletcher's thesis is among the most complete studies of the period to date.

[133] On Paul (Nicolettus) of Venice, see the study in Perreiah, *Paul of Venice: A Bibliographical Study*.

notion of "mental language" (discussed at great length below) and its connection with *insolubilia*.[134]

By the end of the fourteenth century, logical studies began to flourish in Italy. To a great extent, this was because of a new availability there of English logical material from the early part of the century.[135] Thus, Peter of Mantua (fl. 1387–1400), for example, published an important *Logica* already showing many English influences before the turn of the century. Angelo of Fossombrone (fl. 1395–1402), at the very end of the fourteenth century, wrote an *Insolubilia* that is obviously and directly based on Ch. 1 of Heytesbury's *Rules for Solving Sophisms*.[136] Around the turn of the fourteenth and fifteenth centuries, Paul of Venice (newly returned from Oxford) produced a *Logica* (= *Logica parva* or *Little Logic*) and several other logical works.[137]

Paul's students included Paul of Pergula (d. 1451/1455), who wrote a *Logica* and a treatise *De sensu composito et diviso* obviously based on Heytesbury, and Cajetan or Gaetano of Thiene (1387–1465), who wrote commentaries on Heytesbury and other English authors.[138] Other important Italian authors in the fifteenth century include Battista da Fabriano (d. 1446) and Alexander Sermoneta (d. 1486).[139]

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[134] On Peter, see Peter of Ailly, *Concepts and Insolubles*, "Introduction," and the references there.

[135] See Courtenay, "The Early Stages in the Introduction of Oxford Logic into Italy."

[136] See Spade, *The Mediaeval Liar*, pp. 49–52.

[137] On Paul's writings, see Perreiah, *Paul of Venice: A Bibliographical Guide*. There is an enormous work, entitled *Logica magna* (= *Big Logic*), attributed to Paul of Venice in the one complete surviving manuscript and in an early printed edition from 1499. This work has achieved some prominence in the twentieth century (largely through BocheŃski's influence) as a kind of late-mediaeval encyclopedia of the whole logical tradition of the Middle Ages. It is presently being edited and translated in a series of publications by Oxford University Press under the general rubric *Pauli Veneti Logica magna*, edited by Peter Geach and William Kneale. (On closer inspection, the work — although undeniably an important testimony — does not have nearly the encyclopedic value that has been attributed to it.) Paul's authorship of the *Logica magna* seems to have been accepted without question or comment by most recent scholars. But it deserves close scrutiny. The *Logica magna* disagrees doctrinally with Paul's indisputably authentic *Logica parva* on point after major point. It is hard to imagine how the same man could have written both works. It is therefore worth asking what positive evidence there really is for Paul's authorship of the *Logica magna*. And if he didn't write it, who did? The matter is thoroughly discussed in Perreiah, *Paul of Venice: A Bibliographical Guide*. Perreiah argues against the view that Paul (Nicolettus) of Venice wrote the *Logica magna*. He goes on to suggest that the real author was a certain Thomas of Coderonco (= the mysterious "Messinus" found in certain late-mediaeval manuscripts and early printed editions). Although there are many parts of Perreiah's arguments I do not find compelling, I do find his former claim, that Paul (Nicolettus) of Venice did *not* write the *Logica magna*, worth taking very seriously indeed. His identification of Thomas of Coderonco as the true author I find plausible but not definitely established. (Perreiah does not present it as anything more.) The whole matter needs to be thoroughly aired.

[138] His commentaries are contained in the 1494 edition of Heytesbury. On Cajetan, see Valsanzibio, *Vita e dottrina di Gaetano di Thiene.*

[139] On the authors mentioned in this paragraph (except for Angelo of Fossombrone, for whom see n. 136 above), see Maierù, *Terminologia logica*. See also the remarks *passim* in Perreiah, *Paul of Venice: A Bibliographical Guide*.

By 1450, however, things began to change once and for all, even on the Continent. Scholastic logic continued for a long time afterwards,[140] to be sure, but the "new thing" was elsewhere — in Renaissance Humanism and such stuff. That is beyond the scope of this book.

See Appendix I below for a convenient chronological table of names and things.

[140] As discussed, for instance, in Ashworth, *Language and Logic in the Post-Medieval Period*.

J. Additional Reading

For additional reading on the material covered in this chapter, consult the following items: E. J. Ashworth and Paul Vincent Spade, “Logic in Late Medieval Oxford”; Norman Kretzmann, “Semantics, History of,” pp. 358–375 (through the material on the Middle Ages); E. A. Moody, “John Buridan”; Moody, “William of Ockham”; Arthur N. Prior. “Logic, History of,” the following sections: Czesław Lejewski, “Ancient Logic” (pp. 513–520), Nicholas Rescher, “Arabic Logic” (pp. 525–527), E. A. Moody, “Medieval Logic” (pp. 528–534); Paul Vincent Spade, “Late Medieval Logic”; Spade, “Medieval Logic”; Spade, “Origins of Logic in the West.”

Chapter 3: The Threefold Division of Language

In this chapter, I want to talk about a basic division that almost all mediaeval logicians drew between three kinds or "levels" of language.[1] To illustrate this division, I will want to look at some passages in Ch. 1 of John Buridan's *Sophismata*,[2] on "signification." I'm not mainly concerned for now with the notion of signification itself, although I'll talk about it a little here, and will come back to it at much greater length in Chapters 5 and 6 below. For the moment, I'm primarily concerned with another notion that comes up in that first chapter of Buridan.

A. Some Remarks on John Buridan

But first, let me say a little about Buridan's career. Although it is by now perhaps a little dated, Moody's short article on Buridan is quite a good introduction.[3] But I want to say a few things of my own too.

In the mediaeval university system, there were several "faculties." A student would begin his studies in the Arts faculty, often as young as fourteen or so. It was there that he would study Aristotle, and there that he would study logic.

After several years of study in the Faculty of Arts, a student, if he was lucky — and bright — would become a "Master of Arts" (a *"magister artium"* —

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[1] I hasten to add that the "levels" of language here are *not* "levels" in the sense used in much twentieth-century philosophy of language ("object-language," "metalanguage," meta-metalanguage," etc.). The latter is derived from Tarski. See his "The Semantic Conception of Truth" and, more formally, his monumental "The Concept of Truth in Formalized Languages."

[2] Buridan's *Sophismata* was edited by T. K. Scott and published in 1977. Scott also translated the *Sophismata* in 1966, under the title *Sophisms on Meaning and Truth*. (Despite the discrepancy in their dates, his edition was the basis for the translation. There was a considerable delay in publishing the Latin text.) Chapter 8 of the *Sophismata* was re-edited and retranslated by George Hughes and published in 1982 under the title *John Buridan on Self-Reference*, with a very sensible and philosophically astute commentary. Hughes' edition is a big improvement over Scott's, but we really need a new, critical edition of the whole thing. (There is one in progress. See p. 57 below.) Scott's translation is now out of print. I will provide my own translations of all the passages we need, based on Scott's Latin edition.

[3] E. A. Moody, "John Buridan." Faral, "Jean Buridan: Maître ès arts," is for the more stout-hearted among you.

the origin of our M. A. degree). This would allow him to lecture and teach in the Arts faculty.

But most people didn't want to stay in the Arts faculty for very long. Two years or so was the norm. As a result, there was a constant turnover of staff in the Faculty of Arts. The reason for this was that the Arts faculty was simply the first stepping-stone to higher things. A student had to have gone through the Arts faculty, and done his tour of duty as a teaching "Master of Arts" there, before he could go on to one of the "higher" faculties: law, medicine, or especially theology.

So in most cases, we can say with some confidence that a mediaeval thinker's writings on logic were done relatively early in his career — as a student or Master in the Arts faculty. This is not universally true, but it is fairly reliable as a general guideline. For dating an author's works, this fact can be very useful.[4]

Not so with Buridan. For some reason, Buridan never went beyond the Arts faculty at the University of Paris. He taught there all his professional life. It is much harder therefore to date his works.[5]

Buridan was made Rector of the University of Paris in 1328. (This is our first reference to him in the surviving records.[6]) His teaching career therefore probably began several years earlier. The last mention of him as alive occurs in a document dated 1358. He perhaps died in the plague that year, but it is more likely that he died in 1361 or right before.[7] In short, we have at least a thirty-five year span in which to place his works.

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[4] Ivan J. Mueller, the recent editor of John Wyclif's *Tractatus de universalibus*, argues persuasively that Wyclif's *Logicae continuatio* (= *Continuation of the Logic*, a huge "supplement" to his earlier *Logica*) is *not* an early work of Wyclif's, as had long been assumed, but rather a mature work written while Wyclif was in the Faculty of Theology at Oxford. (John Wyclif, *Tractatus de universalibus*, pp. xxxvii–xxxviii and n. 57.) Some scholars have generalized Mueller's argument and concluded that the "general guideline" I just mentioned is not a reliable one after all. Thus Michael J. Fitzgerald writes,

> Recent research on Wyclif, for example [Fitzgerald cites Mueller's argument], provides an excellent counterexample to a myth surrounding the study of late scholastic logic. The myth assumes, for some reason, that theologians lost interest in treating purely logical matters over the course of their academic careers… (Richard Brinkley, *Richard Brinkley's Theory of Sentential Reference*, p. 14, continuation of n. 36.)

But the circumstances of Wyclif's life and writings are hardly typical, and do not warrant dismissing the general guideline as a "myth." In general, one should be very hesitant about dating an author's logical writings after his work in the Faculty of Arts unless there is solid evidence. There *is* such evidence in the case of Wyclif, but not for many other authors. On the whole, in the absence of any evidence one way or the other, the safer and more likely assumption is that a logical work belongs to an author's career in the Faculty of Arts. That's not infallible, but it's a good rule of thumb.

[5] See, for example, the remarks in the Introduction to John Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* pp. xv–xvii.

[6] He was made Rector again in 1340.

[7] That was the year his benifice was transferred to someone else. (See John Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* p. xi.) A "benifice" was a kind of endowed

1. Buridan's Writings

Buridan produced a number of writings on many philosophical topics. In logic, we have already met his *Consequentiae*, *Summulae* and *Sophismata*, in Chapter 2 above. Let me say a little more about those works now.

Buridan's *Consequentiae* is one of his works we can date with some confidence. According to the best estimate, it was written in 1335.[8] There is a complete English translation.[9]

The *Summulae,* which probably somewhat predates the *Consequentiae,*[10] is a kind of student handbook of logic, and came to be quite popular in European universities. It appears to be a set of lectures for a course Buridan himself taught in logic. As it survives in the manuscripts and early printed editions,[11] the *Summulae* consists of eight treatises. Near the beginning of the first treatise, Buridan sets out the plan of the work this way[12]:

> We shall divide this book into nine treatises. The first of them will be about propositions and their parts and peculiarities, the second about predicables,[13] the third about categories, the fourth about supposition, the fifth about syllogisms, the sixth about dialectical topics, the seventh about fallacies. I shall append an eighth [treatise], about divisions, definitions and demonstrations. The ninth [treatise] is about the practice of sophisms. But in these lectures[14] I shall not pursue the last treatise together with the other eight.

Jan Pinborg has plausibly remarked that the last sentence suggests that the *Summulae* as we have it is a *revised* course of lectures. Earlier, it seems, Buridan had included a section on sophisms, but now he wants to omit that section from the course.[15] And sure enough, in the surviving manuscripts and printed editions, the ninth treatise is lacking. Nevertheless, we do possess it; it survives separately

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grant given to support academics and other worthy people. It typically consisted of the income from a farm or other such source.

[8] See John Buridan, *Tractatus de consequentiis*, p. 9.

[9] In John Buridan, *John Buridan's Logic*, which also contains the *Suppositiones* from his *Summulae*.

[10] See John Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* pp. xv–xvi.

[11] The early printed editions do not contain anything close to the authentic text of Buridan. Instead, they contain text by a much later author named John Dorp, superimposed on a structure that does come from Buridan. See John Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* p. xiii.

[12] Translated from the text in Pinborg, *The Logic of John Buridan*, p. 82.

[13] That is, about Porphyry of Tyre's five "predicables" as described in his *Isagoge*. They are: genus, difference, species, property (= *proprium*) and accident. On Porphyry, see Ch. 2 above, p. 33. A translation of Porphyry's *Isagoge* may be found in Spade, *Five Texts on the Mediaeval Problem of Universals,* pp. 1–19.

[14] in these lectures: *in hac lectura*. Literally in the singular, but Buridan is referring to his whole course of lectures as one big *Lectura* or "reading."

[15] Pinborg, *The Logic of John Buridan*, p. 72.

in an independent manuscript tradition as Buridan's *Sophismata*, which I will say more about in a moment.

Buridan took as a kind of "textbook" for his lectures Peter of Spain's *Summulae logicales*,[16] and in fact part of the work is simply *verbatim* quotations from Peter of Spain's own *Summulae*,[17] accompanied by Buridan's comments and corrections. As Buridan himself says[18]:

> Because of this, since I wanted to state certain common points about the whole of logic without dragging out the investigation too long, I have decided to get down especially to expounding and supplementing the short treatise on logic that the venerable doctor, master Peter of Spain, put together a while back — indeed, even sometimes saying and writing [things] otherwise than [what] he wrote and said, as it seems to me fitting.

Buridan may well have been the first person to use Peter of Spain as a textbook in this way.[19]

Tracts 1–2 and 6 of Buridan's work are fairly close to the corresponding parts of Peter of Spain's.[20] The third tract is an abbreviated version of Peter's. In the fifth treatise (on syllogistic), Buridan adds four chapters of his own on modal syllogistic; they make up the bulk of the treatise. Tracts 4 and 7, on supposition-theory and fallacies, are *completely* different from the corresponding treatises in Peter of Spain. And Tract 8, on definition, division, and demonstration, does not correspond to anything in Peter.[21]

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[16] The term 'textbook' should not be taken too literally here. Remember that we are talking about a time more than a century before the invention of the printing press. Students could not just go to their campus bookstore and purchase a copy of their "textbook," which they would then be expected to read on their own and around which the "master" would build his lectures. On the contrary, the term 'lecture' literally means a "reading"; the text would actually be read aloud word for word, so that students could write it down and thereby have a copy for themselves. "Lectures," therefore, amounted to a kind of dictation. (To be sure, there were *"scriptoria"* associated with universities. Basically, these were the mediaeval equivalent of modern "copy shops" one finds surrounding campuses today, but with scribes instead of copy machines. Hiring the services of such a *scriptorium* was an expensive thing to do. Most students probably couldn't afford it, and — even if they could — wouldn't have resorted to a *scriptorium* except for very special purchases.) Having said that, it is still true that Buridan built his own course around the text of Peter of Spain's *Summulae logicales.* Read on to see what I mean.

[17] This sort of thing was quite common in the Middle Ages, and was in no way regarded as "plagiarism." On the contrary, to take over another author's work and make it your own was sometimes regarded as a way of *honoring* him. Besides, as you will see immediately below, Buridan explicitly *says* he is using Peter of Spain, and so gives due credit even by modern standards.

[18] Translated from the Latin text in Pinborg, *The Logic of John Buridan*, p. 72.

[19] *Ibid*.

[20] By 'corresponding', I mean "dealing with the same topics." The order of treatment is not the same in Buridan's work as it is in Peter's.

[21] For the claims in this paragraph, see Pinborg, *The Logic of John Buridan*, pp. 73–74, and John Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* pp. xiii–xiv.

There is no complete English translation of Buridan's *Summulae*,[22] and for that matter there is still no reliable, critical edition of the entire Latin text. Fortunately, the recently formed Buridan Society has dedicated itself to preparing and publishing a critical edition of the *Summulae,* together with a new critical edition of the *Sophismata.*[23] Tracts 2–3 of the *Summulae* have been published so far.[24]

As for Buridan's *Sophismata*, the surviving version of it appears to have been written no earlier than the early 1340s, since it refers to the theory of *complexe significabilia* usually associated with Gregory of Rimini, who wrote then.[25]

B. The *Quaestio*-Form

The *Sophismata* is written in a loose *quaestio*-format. It is important to recognize this fact and what it means. The *quaestio*-form was developed in the twelfth and thirteenth centuries (although its roots go back much further than that), and it became a major literary form for mediaeval writers. In the *pure* form — perhaps most familiar from Aquinas' *Summa theologiae* — the *quaestio* has five parts:

1. Statement of the question. This is always put in the form of a "yes/no" question: "Whether such and such is so."
2. Arguments for one side.
3. Arguments for the other side.
4. The author's own view.
5. Replies to the opposing arguments.

For example, in the passage of his *Summa theologiae* where Thomas Aquinas gives his five famous arguments for the existence of God, we find the following structure[26]:

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[22] One is being prepared by Gyula Klima on the basis of the forthcoming Buridan Society edition as described below.

[23] Joel Biard has published a French translation of the *Sophismata,* with notes, based on the forthcoming new Latin edition of that text by Fabienne Pironet.

[24] See John Buridan, *Johannes Buridanus, Summulae: De Praedicabilibus,* and John Buridan, *Johannes Buridanus, Summulae: In Praedicamenta.* For a discussion of the state of the whole matter (before the formation of the Buridan Society), see Pinborg, *The Logic of John Buridan*. Latin editions of short passages from the *Summulae* may be found *ibid*. Tract 4 (on supposition) has been edited in preliminary fashion by Maria Elena Reina in John Buridan, "Giovanni Buridano: 'Tractatus de suppositionibus'," and translated by Peter King in John Buridan, *John Buridan's Logic*.

[25] On Gregory, see Ch. 2 above, p. 46. On the theory of *complexe significabilia,* see Ch. 6 below, pp. 168–178.

[26] Thomas Aquinas, *Summa theologiae* I, q. 2, a. 3. (Read this: "*Summa theologiae*, part I, question 2, article 3." The *Summa theologiae* is divided into three parts (the second into two subparts). Each part is divided into several "questions," each dealing with a general topic. Then each "question" is discussed in several "articles." Each "article" exhibits the *quaestio*-format I am describing here. You may find the architecture of the *Summa theologiae* interesting, but it is not

1. First the statement of the question: "Does God exist?"
2. Then *two* arguments for the negative, purporting to show that God does *not* exist. The first of these is a just the problem of evil, and the second is in effect a claim that God is theoretically superfluous for an adequate account of the world.
3. On the affirmative side, Aquinas cites a single text from Scripture (Exodus 3:14): "I am who am." Since this is after all a summa of theology and not of philosophy, this is a perfectly legitimate way to argue in this context.
4. Then comes the *"corpus"* or "body" of the article, signaled by the word *'Respondeo'* (= I reply).[27] Aquinas then presents his five arguments. I won't rehearse them here.
5. Finally, he replies to the two arguments given under item #2 above.

The beauty of this way of writing about theoretical matters is that it *forces* you to deal explicitly with objections to your own views. Either you will have to take account of objections in actual circulation, in the case of a live "issue of the day," or else you will at least have to *anticipate* objections, in the case of other questions. The corresponding disadvantage is that this style of writing limits you to "yes/no" questions, and tends to inhibit other ways of presenting your views. If your topic is "substance," for example, and you are confining yourself to the *quaestio*-format, you may very well never get around to saying "All right, here is my theory of substance." Instead, you will ask questions like "Is substance to be identified with matter?" (yes or no?), "Is it to be identified with form?" (yes or no?), "Is it to be identified with the *composite* of matter and form?" (yes or no?).

This disadvantage is a real one in practice. Very often, a mediaeval author's overall views on a given topic have to be pieced together from particular discussions in a variety of contexts. You will just have to get used to this fact.

Buridan's *Sophismata* fits this general *quaestio*-format, although only *very* loosely. Consider, for example, the first three sophisms he discusses in Ch. 1.[28]

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important for present purposes. We will not be using the work in this book. I bring it up only as an illustration.)

[27] Mediaeval manuscripts were typically written in a form of abbreviated Latin — a kind of shorthand. In scholastic Latin, the abbreviations were *very* compressed, and require special training to decipher. (The discipline is called "palaeography," and no serious mediaevalist can avoid it.) You may be interested to know that the standard abbreviation for *'respondeo'* was: ℞, the origin of the familiar symbol we still find in drug stores and pharmacies. You see, the *quaestio*-form was used not only in philosophical and theological disputations, but also in medicine: Here are the symptoms. It might be this disease, for the following reasons, in which case one course of treatment is appropriate. Or it might be that other disease, for these other reasons, and in that case a different treatment is required. The physician has to come to a decision and *prescribe* (*"respondeo"*) one treatment or another. The same format also lends itself perfectly to arguments in a court of law.

[28] Scott, ed., pp. 19–21; Scott, trans., pp. 64–66.

Sophism 1 is 'Every spoken proposition[29] is true'. Notice that in this case the sophism is not explicitly stated in the form of a "yes/no"-question at all. But the structure is implicit nonetheless. The *real* question Buridan is asking is: "Is that so or not?," "Is every spoken proposition true, or is that not so?"

After presenting the question in this slightly elliptical form, Buridan goes on to offer a rather obscure argument proving that it *is* so — every spoken proposition *is* true. (For the moment, let's not worry about the actual argument. Here I want to focus only on the *form* of the *quaestio.*) So far, then, we have steps 1–2 of the schema.

Buridan doesn't bother to give us step 3 — arguments on the other side of the question. Presumably this is because it's obvious on the face of it that *not* every spoken proposition is true; some of them are false, after all. So, for convenience, Buridan just skips over step 3 of the schema.

The importance of all this is that sometimes people don't realize that Buridan (or other authors who write the same way) doesn't always *believe* the arguments he gives. Sometimes he is simply setting up an argument so he can refute it later on and in the process point out the mistake in the fallacious argument and thereby teach us something.

The same thing happens with Buridan's sophism 2 in Ch. 1 of his *Sophismata.* Here again, we don't have the sophism stated as an explicit "yes/no" question but rather as a statement, 'A horse is an ass'. The implicit question is: "Is that so or not?"

Once again, Buridan gives us an obscure proof for the affirmative. But there is no counterargument for the negative, since he takes it for granted that horses *aren't* asses. It is the obviousness of that fact that gives the sophism its edge.

Consider also sophism 3 of Ch. 1. The sentence there is 'God does not exist'.[30] Here Buridan gives us a long proof for the affirmative, that it really is so that God does not exit. Thus, we have steps 1 and 2 of the schema. Then he tells us "The opposite is agreed to by all and must be conceded." That little sentence plays the role of step 3 of the schema, the "counterarguments" — although it's not much of an actual argument in this instance.

Notice that so far none of Buridan's three "sophisms" has gone beyond step 3 of the schema sketched above. In fact, Buridan sets up *six* sophisms in this way before he finally turns to his own doctrine and sets out a series of "conclusions."[31] It is only here that Buridan lays out the principles of his own view, and

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[29] 'Proposition' in mediaeval logic does not typically mean what it does in recent philosophy. For the Middle Ages, a proposition was a piece of language, a declarative sentence — even (depending on the author) an individual sentence-*token*. The word was not typically used in its modern sense, to mean whatever it is that is "expressed" by such a declarative sentence or sentence-token. (There are some exceptions, but don't worry about them for now.) I will be using 'proposition' in its mediaeval sense throughout this book, except where I quite explicitly indicate otherwise.

[30] Scott translates it as 'God is not' (Scott, trans., p. 65).

[31] Beginning on p. 24 of Scott's edition, p. 70 of his translation.

finally[32] actually delivers his own verdict on each of the six sophisms in turn, and on the supporting arguments for or against them. In other words, the first six sophisms in Buridan's Ch. 1 are not treated one after another; they are all treated *together*.

The moral of this whole story is this. *Always* be sure, when you're attributing a view to Buridan or to any other late mediaeval philosopher, that he is speaking for *himself* in the passage you are looking at, and not simply reporting some view he himself rejects. It is very easy to lose track of where we are in these discussions, especially when — as in this first chapter of Buridan — the structure of the discussion gets complicated. Always read *around* the text you are looking at, to see its context.

C. What Is A "Sophism"?

Sophisms — in a sense we must now describe — lend themselves especially well to this kind of *quaestio*-format. A "sophism" in the mediaeval sense is not just a piece of silly "sophistry" (although that meaning was current too). It is a kind of *problem-sentence*, a sentence (often accompanied by a little story or "case" [= *casus*] to set the context) for which one can give more or less plausible and persuasive arguments on both sides — pro and con. Such sophisms served as vehicles for illustrating logical rules and distinctions. Their role was thus very much like that of Bertrand Russell's more recent sentence 'The present King of France is bald', or Frege's 'The Morning Star is the Evening Star'. Of course, the real interest in Russell's and Frege's sentences does not lie in the planet Venus or in the state of the royal pate. There is a more substantive general point to be made in each case, and the two sentences are merely the vehicles chosen for illustrating it. So too in the mediaeval discussions of sophisms. There is always a theoretical issue that underlies the discussion, and if you don't get it, the whole exercise will no doubt appear utterly fatuous.[33]

It is easy to see how sophisms are tailor-made to be discussed in the *quaestio*-format. And that is what Buridan does in his *Sophismata*.

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[32] Beginning on p. 31 of Scott's edition, p. 78 of his translation.

[33] For instance, there is a little treatise, attributed to William Heytesbury, called *Asinine Sophisms* (= *Sophismata asinina*), which begins by arguing that you are an ass. (See Wilson, *William Heytesbury*, p. 208.) It was this sort of thing that the Renaissance humanists loved to poke fun at. (Note that the title of this work has a double meaning both in Latin and in English. It can mean "Really Stupid Sophisms," or it can mean — quite neutrally — "Sophisms about Asses," which is exactly what the work is.) There has been some question about the authenticity of this work. But Fabienne Pironet, who has studied the question, concludes that the work is genuinely by Heytesbury. See Pironet, "'The *Sophismata asinina*'."

D. The Relation of Writing to Speech

Now let's turn to Buridan's first two "conclusions" in Ch. 1 of his *Sophismata.*[34] They will lead us directly into the main topic I want to discuss in the present chapter. Here Buridan is speaking for himself, not just presenting an argument to be rejected later. Here is his first conclusion (Text **(61)**)[35]:

> And the first conclusion is that written letters signify utterances[36] [that are] spoken or will be spoken. And they do not signify any things outside the soul, such as asses or rocks, except by means of the signification of utterances.

For example, the written word dog, according to the claim in this first conclusion, signifies the spoken term 'dog'. (For convenience, let us agree to use underlining to indicate *written* expressions, and single quotation marks to indicate *spoken* expressions. This convention will be followed throughout the rest of this book in cases where it matters.)

Buridan gives two illustrations, which he thinks support this first conclusion. Whether they really do support it or not doesn't matter for the present. At any rate, they do *illustrate* his point, and that is enough for now.

> (1) *First illustration:* Teachers teach students to read and write by teaching them which letters go with which sounds. Thus, the written letter b goes with the spoken consonant 'b', the written letter a with the spoken vowel 'a', and so on. Under the name "phonics," something like this method is often still used to teach children today. It makes even more sense in a language like Latin that is more phonetically spelled than English is.
>
> (2) *Second illustration:* Consider someone whose native tongue is Latin. (In fact, by the fourteenth century, there were effectively no native Latin speakers left. Latin was a *second* language, which one learned for certain specialized purposes: philosophical, theological,

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[34] Scott ed., pp. 24–25; Scott trans., pp. 70–71.

[35] **Note:** Underlined references to numbered passages refer to the collection of texts gathered in Appendix 2 at the end of this volume. Scott ed., p. 24; Scott trans., p. 70. For the words 'by means of the' Scott's translation has 'through the mediate', which is not at all the same thing. The point is of some importance, because Buridan is not saying here that the signification sounds have is "mediated" in any way. Scott has mistranslated an active participle as a passive participle. The same point arises with the second conclusion. See n. 53, below.

[36] utterances = *voces*. There is no uniformly good English translation for this word. Basically, a *vox* (plural *voces*) is a sound produced by the vocal apparatus of an animal. It may or may not mean anything. 'Word' is both too broad and too narrow a translation, too broad because we talk about *written* words as well as spoken ones, too narrow because it suggests meaningfulness. 'Speech' will work sometimes, but often suggests long-winded oratory, whereas a *vox* might be a single syllable. After long experience, I have adopted the policy of translating this word 'utterance' and just living with it. For some mediaeval explanations of what the word means, see Texts **(20)** and **(75)**.

> legal, medical, diplomatic, etc.[37] But this does not affect Buridan's point.) In order to get Buridan's illustration to work, you have to suppose he is talking about an *illiterate* Latin speaker. Such a person, Buridan says, knows what the *spoken* sentence 'A man is running' (or rather its Latin equivalent *'Homo est currens'*) signifies, since he speaks Latin, after all. But he is left completely in the dark by the *written* sentence A man is running (or Homo est currens), because he is illiterate. On the basis of the illustration, Buridan seems to think the reason the man doesn't know what the written sentence means is that he doesn't know how to *pronounce* it.

The actual statement of the first conclusion (with its reference to "written *letters*"), and the first illustration, suggest that Buridan is thinking that individual *letters* signify the correlated spoken *phonemes*. But in fact, Buridan wants to make a more general claim. It's not just isolated letters that signify utterances, but rather written language as a whole that signifies spoken language.

This is clearer in the second illustration, which operates on the level of whole words and sentences rather than of individual letters and phonemes. The point is perhaps confirmed a little later on in Buridan's Ch. 1, where Buridan is explaining his eighth "conclusion" (Text **(64)**)[38]:

> And so too a written term, if it does not supposit materially, neither supposits for itself, nor for the utterance it immediately signifies, …

Do not worry for now about the terminology of "suppositing," materially or otherwise, and of "immediate" signification. We will discuss all that later. For the present, just note that Buridan here says that a written term immediately *signifies* an utterance. The point is that Buridan is here talking about a written *term* — that is, a whole word, not just individual letters.

The general idea in all of this then is that *written* language is viewed as in some sense inferior to and dependent on *spoken* language. A written sentence, for example, signifies first of all the *sounds* you would utter if you read the sentence aloud. Of course, it also signifies whatever the *spoken* sentence signifies — but, as Buridan indicates at the end of his Conclusion 1 (Text **(61)**), that is a secondary and derivative kind of signification, which he says is *by means of* the signification of the spoken sentence:

> And the first conclusion is that written letters signify utterances [that are] spoken or will be spoken. And they do not signify any things outside the soul, such as asses or rocks, except by means of the signification of utterances.

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[37] See Murphy, "The Teaching of Latin as a Second Language in the 12th Century." What he says about the twelfth century is even more true of the fourteenth.

[38] Don't worry here about what his eighth conclusion actually *is*.

E. What Is "Signification"?

Without worrying too much about the details of the signification relation for now, we ought at least to get a rudimentary idea of what it involves.

The Latin verb *'significare',* and its corresponding noun *'significatio',* are frequently translated by 'to mean' or 'meaning'. I think this should be avoided in almost all technical contexts. The term 'meaning' is a notorious one in modern philosophical vocabulary. It suggests a connection perhaps with the "ordinary language" philosophers' doctrine that "the meaning is the use," or with various Montague versions of meaning, or Fregean "senses," or Quinean "stimulus-response meaning," and so on. Any one of these theories may be quite respectable in its own right, but there are so *many* of them. And besides, none of them is very much like what the mediaevals called *significatio* or "signification."

There was a perfectly clear notion in the Middle Ages of what signification is. Authors tell us quite explicitly. We don't gain anything by translating that quite clear notion into the obscure, or at least controversial, modern notion of "meaning." We'll talk more about this point later.

Well, what *was* this mediaeval notion of signification that was so clear?

There was a great disagreement in the Middle Ages about *what* it is that linguistic units signify, but there was universal agreement over the defining *criterion*, and that is what we are interested in now. Buridan mentions this criterion in discussing the fourth sophism of his Ch. 1 (Text **(60)**)[39]:

> For "to signify" is described as being "to establish the understanding" of a thing. Hence a word is said to signify that the understanding of which it establishes in us.

Thus:

To signify $x =_{df.}$ to establish an understanding of x.

The Latin here is *'constituere intellectum'*, construed with the genitive. 'Understanding' (= *'intellectus'*) in this context does not necessarily imply any kind of theoretical knowledge; to "understand" *x,* in the sense relevant here, is simply to have a *concept* of *x.* In the end, therefore, the general idea is that a thing signifies what it makes us think of.

There are two main sources for this notion in the Middle Ages. The first and probably less important source — at least less important in this context — is St. Augustine's *De doctrina christiana* (= *On Christian Doctrine*), II, Ch. 1[40]:

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[39] For the word 'establishing', Scott translates "that which establishes," which is not right. He has translated an infinitive *('constituere'),* which in Latin (as in English) also serves as the nominative of the gerund, as though it were an active participle.

[40] Augustine, *De doctrina christiana,* Martin, ed., II, c. 1, lines 5–7. Robertson's translation (Augustine, *On Christian Doctrine*), p. 34, omits the 'else', which is important, because the word implies that for Augustine signification is irreflexive. I am not happy with the 'of itself' (= *'ex se'*) in this passage. If it is to be construed with the verb 'makes' (= *'faciens'*), it implies

> For a sign is a thing that of itself makes something else besides the impression it makes on the senses come into cognition.

Basically the same point is made in Augustine's *De dialectica,* Ch. 5, although that work did not circulate widely in the Middle Ages[41]:

> A sign is what shows both itself to the sense and something else besides itself to the mind.

In the *De doctrina christiana,* Augustine goes on to give examples of such "signs." When we see smoke, we think of fire — and so smoke "signifies" fire. When we see a track or footprint, we think of a person or animal that made that footprint — and so the footprint "signifies" the person or animal.

So taken, the notion of signification is very broad, and is not by any means confined to language. Any sort of mental association will count as a signification relation. We see one thing; we think of something else.

This notion of signification is of course too broad to be generally useful in logic and semantic theory. Ockham, for one, recognized this and distinguished *two* senses of the word 'sign'. Here is the first one[42]:

> In one sense [it is taken] for everything that, when apprehended, makes something else come into cognition …

This is what we might call the *broad* sense of 'sign'. And it is exactly the sense we have just seen defined by Augustine.[43]

But Ockham goes on immediately afterwards to define a more restrictive sense of 'sign'.[44] This more restrictive sense is the notion of a *linguistic* sign. I won't pause over that definition now, since it contains some technical terminology we'll go into later. But I do want to point out now that, in Ockham's second sense, a sign need not always signify something *else*, as Augustine and Ockham's own first definition required. In other words, in the linguistic sense, a thing might very well be a sign *of itself*. That is not ruled out by the second definition Ockham gives. This is a small point, but it has misled some people into making *big* errors.

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that signs have their significative capacity "built in," and that signification has nothing to do with human convention. This may be acceptable for the kinds of signs Augustine goes on to treat in the immediately following lines (I'll discuss those in a moment), but it will hardly do for *linguistic* signs. Perhaps the *'ex se'* is to be construed with the 'else', in which case 'something else' becomes 'something other than itself'. This is the way Robertson translates it. It avoids the theoretical problem I just mentioned, but seems to me to strain the Latin. *'Aliud ex se'* is not a locution I am familiar with. (The normal construction would be *'aliud a se'*.) Perhaps those who know Augustine's Latin better than I do can adjudicate the matter.

[41] Augustine, *De dialectica,* p. 86.

[42] See William of Ockham, *Summa of Logic* I.1, § 11.

[43] Notice the word 'else'.

[44] *Ibid.,* § 12.

Note that all this means that Ockham's second sense of 'sign' is not just a subcase of the first. There are signs in the second sense that are *not* signs in the first sense — namely, those that are signs of *themselves*.

Augustine therefore is one source for the notion of "signification" in the Middle Ages. But a second and much more important source for mediaeval logic and semantics generally is Aristotle. The relevant passage is *De interpretatione* 3, $16^{b}19$–21. Here is my translation directly from the Greek (Text **(4)**):

> Therefore, verbs spoken by themselves are names, and signify something. For the speaker halts his thinking and the listener pauses.

But of course few mediaeval logicians after Boethius read Greek. They read their Aristotle in Latin, and in particular they read the *De interpretatione* in the Latin translation of Boethius (or something pretty close to it). In the passage just quoted, Aristotle is talking about *verbs*. And he says that verbs, like nouns, are *names*. That is, they *signify* something. And why does he say that? Well, here is his reason (in my English translation of Boethius' Latin translation, of Aristotle's Greek (Text **(10)**)):

> Indeed verbs, when uttered by themselves, are names and signify something. For he who says [a verb] establishes an understanding, and he who hears it rests.

The part about the hearer's "resting" is rather obscure. Presumably it means roughly that the hearer's mind stops and fixes on something when he hears a verb. But in any case, that's not the important part of the passage. The important part is the phrase *'establishes an understanding'*. Someone who utters a verb *establishes an understanding*.

Boethius' Latin here is *'constituit intellectum'*. And there you have it: the very phrase Buridan uses in Ch. 1, sophism 4 (Text **(60)**), to define signification. The only difference is that he puts it in the infinitival form.

Buridan is therefore implicitly appealing to Aristotle's notion of signification in that passage. It is an appeal his contemporaries would immediately have recognized. And you should come to recognize it too; the phrase 'establish an understanding' should tip you off whenever you see it.

This psychologico-causal notion of signification was the predominant one throughout the Middle Ages. To cite just two further examples, we find it for instance in the twelfth century, in Peter Abelard[45]:

> …universal names seem to bring about no signification of things — especially since in addition they establish no understanding of any thing.

[45] From his *Logica ingredientibus*. See Peter Abelard, *Peter Abelards philosophische Schriften,* the *Glosses on Porphyry*, p. 18.16–17. My translation, from Spade, *Five Texts on the Mediaeval Problem of Universals,* p. 40, § 79.

What Abelard is saying here in effect is this: Here is a problem for you. Universal terms don't seem to have any signification. Why not? Because *they establish no understanding of any thing*.

The details of his argument are irrelevant here. The point is simply: there's that phrase again. Even authors who don't use those exact words nevertheless have pretty much the same notion of signification. Thus, for our second example, here is a common late mediaeval definition of signification[46]:

> To signify is to *represent* **(a)** something or **(b)** some things or **(c)** somehow to a cognitive power.

This turns out to be pretty much the same notion, although it's broken down into three separate clauses to accommodate three separate cases. We'll talk more about this later on when we discuss the notion of signification directly.[47] But for the present we are not really concerned with the details of the signification relation and what exactly it is. What we are mainly concerned with is what the title of this chapter calls "the threefold division of language."

F. Three "Levels" of Language

Now you may think I've gone off track by now. But I haven't. What I've done so far is a kind of extended commentary on the first of Buridan's four "conclusions" in Ch. 1 of his *Sophismata*. Let's diagram what we've got at this point in our story. The *written* term man, for example, signifies the *spoken* term 'man'. (Recall that we are using underlining to quote written expressions and single quotation marks to quote spoken expressions.[48]) In the discussion of the eighth conclusion in his Ch. 1, Buridan calls this signification relation an *immediate* one (Text **(64)**)[49]:

> And so too a written term, if it does not supposit materially, neither supposits for itself nor for *the utterance it immediately signifies* nor for the concept it signifies consequently, by means of the utterance, …

Once again, don't worry for now about the terminology of material supposition. Just note the italicized words. We have then:

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[46] Translated from the Latin quotation in Nuchelmans, *Late-Scholastic and Humanist Theories of the Proposition*, p. 14.

[47] See Chapters 5–6, below.

[48] See p. 61, above.

[49] Part of this was quoted above, p. 62.

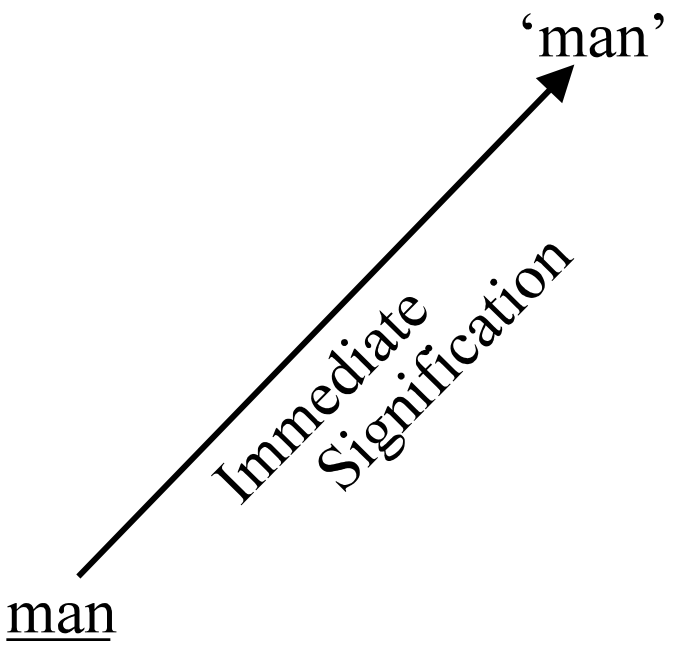

Figure 4: The Relation of Writing to Speech

On the other hand, Buridan's Ch. 1, conclusion 1 (Text **(61)**), and perhaps also Text **(64)** quoted just above (although the point is maybe not very clear in the latter text[50]), tell us that a written term may also signify other things as well — namely, whatever the corresponding spoken term signifies. But this is a kind of derived signification, and only comes about by means of the signification of the spoken term.[51]

In conclusion 1 (Text **(61)**), Buridan puts the point badly. He *says* there that written terms do not signify anything *outside the mind* except by means of the signification of the spoken term. But he doesn't mean that, because of course the spoken term itself is outside the mind, and the written term signifies that *immediately*. What he means instead is that written terms don't signify anything (whether in the mind or outside the mind) *other than the corresponding spoken terms,* except by means of the signification of those spoken terms.[52] And, as we shall soon see, they do signify additional things in that mediated way. Thus we can add a little more to our diagram:

[50] Nevertheless, note the words "signifies *consequently*," in connection with the discussion to follow.

[51] See n. 35 above, on Scott's mistranslation of this first conclusion.

[52] Scott's mistaken translation "except through the *mediate* signification of the sounds" (see n. 35 above) suggests it is the signification of the *spoken* term that is mediated. But that's not what the Latin says. It is the signification of the *written* term that is said to be *by means of* (= *mediated* by) the signification of the spoken term.

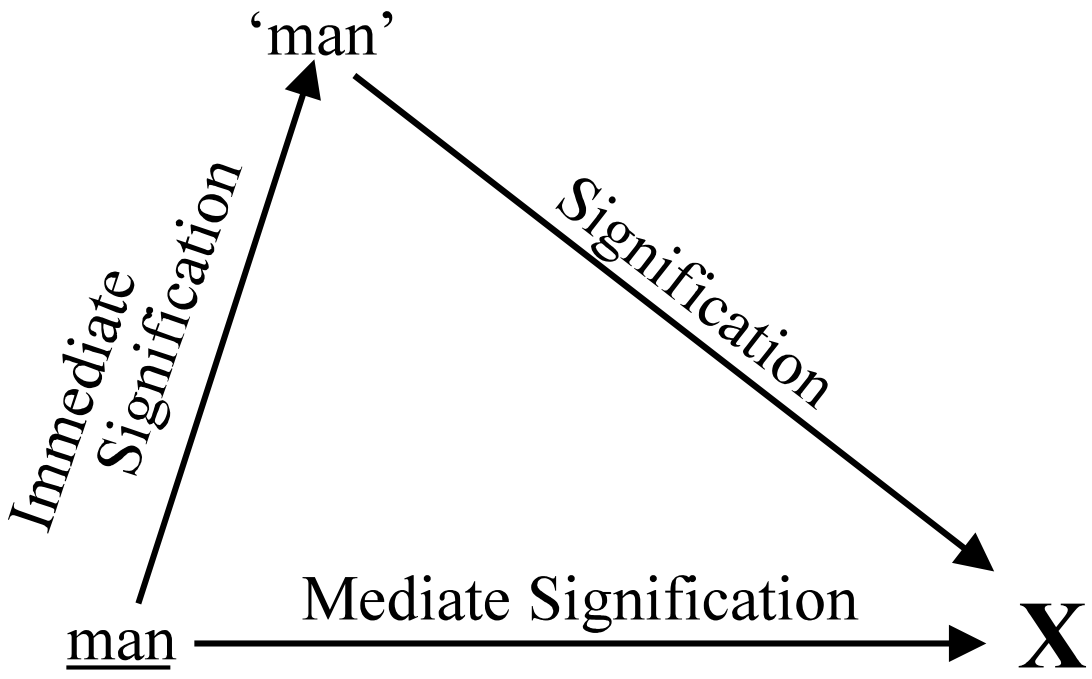

Figure 5: Mediate and Immediate Signification

Now let's look at Conclusion 2 of Buridan's first chapter, where we get a third level (Text **(62)**)[53]:

> The second conclusion: significative utterances signify passions[54] (that is, concepts) of the soul and not other things, except by means of the signification of concepts.

In the discussion of his eighth conclusion (Text **(63)**), Buridan tells us that this signification relation between the spoken word and its corresponding concept is another relation of *immediate* signification.[55]

> Hence it is to be noted further that although an utterance immediately signifies a concept, nevertheless by means of the concept it is imposed to signify the [things] that are conceived by that concept.

So we now have the following picture (let's agree to use double quotation marks for concepts, just as we are using underlining for written terms and single quotation marks for spoken terms):

[53] Once again Scott has 'except through the mediate signification' where I have 'except by means of the signification'. Again he has translated an active participle as a passive one.

[54] This is a common usage, and is not nearly as interesting as it sounds. It just means "things received passively."

[55] The passage comes a little before Text **(64)**, quoted on pp. 62 and 66 above. Note that here Scott has the active participle translated correctly ("through the mediation of").

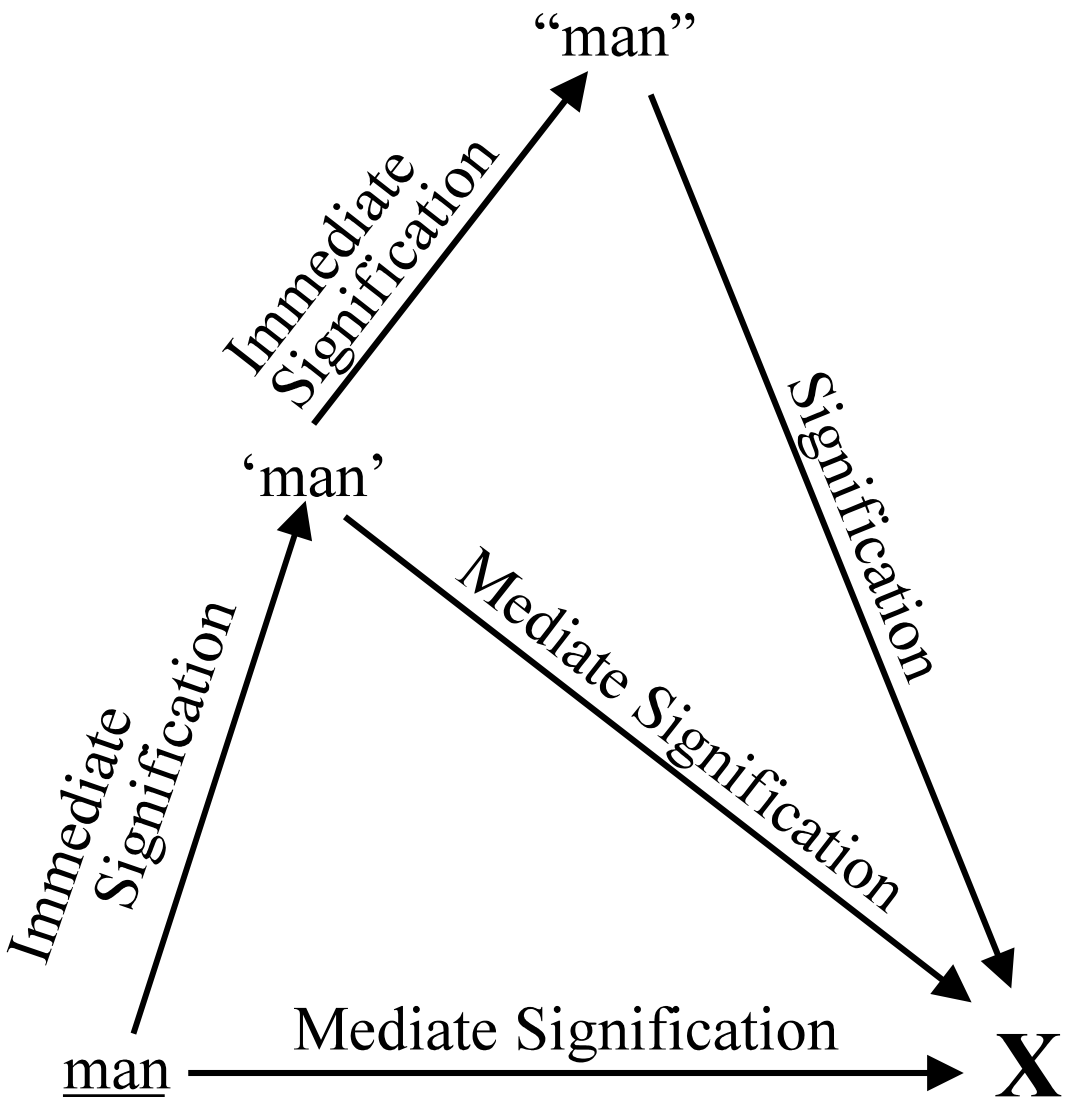

Figure 6: The Three Levels of Language

The spoken term then *immediately* signifies the *concept*, and *mediately* signifies what the concept signifies.

Of course, since the written term *mediately* signifies what the spoken term signifies, as we have already seen, and since the spoken term signifies the concept, it ought to follow that the written term signifies the concept too. And that is so. As Buridan remarks in his discussion of his eighth conclusion (Text **(64)**)[56]:

> And so too a written term, if it does not supposit materially, neither supposits for itself nor for the utterance it immediately signifies

[56] The passage has already been quoted twice, on pp. 62 and 66 above, but I am here emphasizing different words. Note that here again Scott has the active participle translated correctly (“through the mediation of”).

> nor for *the concept it signifies as a consequence, by means of the utterance* …

The full schema can therefore be presented as follows (and this time let's label the various relations $\mathbf{R_1}$ through $\mathbf{R_6}$, for future reference):

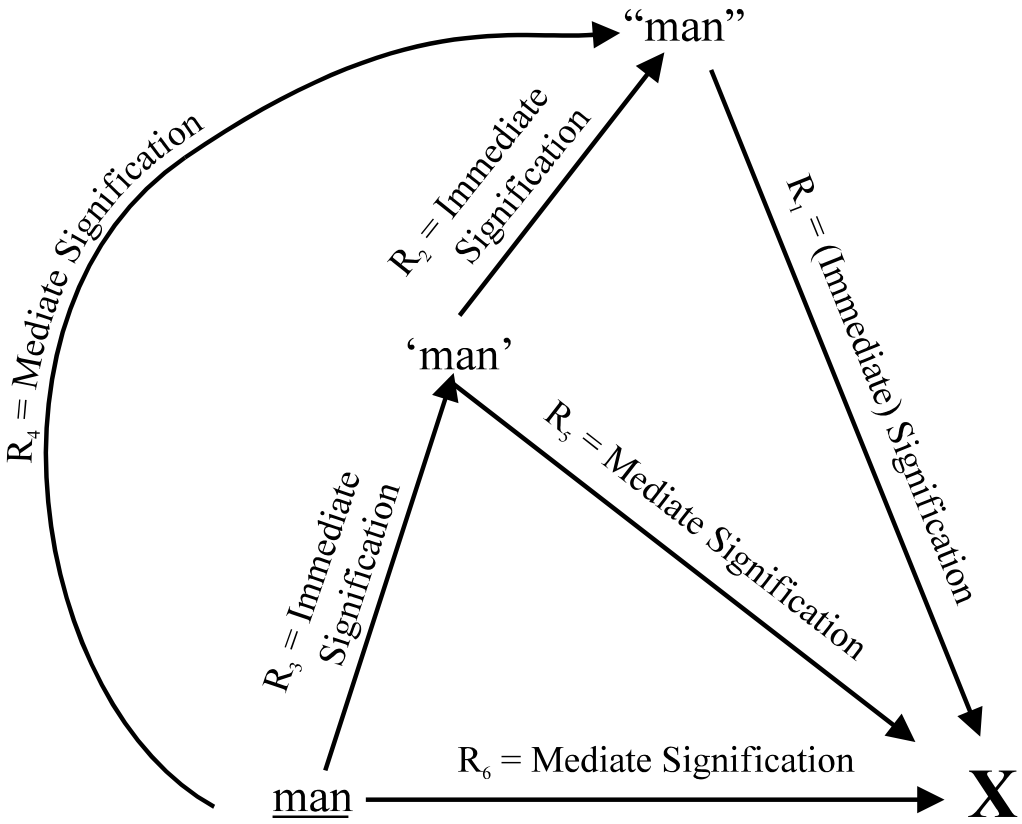

Figure 7: The Full Schema

What we have then here is the notion that concepts play the role of *terms*, just like spoken and written terms, only instead of being terms in spoken or written language, concepts are terms in a kind of *mental language*.

In the discussion of sophism 1 in his first Chapter, Buridan extends this notion to talk not just about mental *terms* but also about mental *propositions*[57]:

> For every spoken [proposition] signifies a mental one similar to it or proportionally corresponding to it…

Again, in the reply to his first sophism, he does the same thing.[58]

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[57] Scott ed., p. 20; Scott trans., p. 64. Recall the caveat above (n. 29) on the mediaeval use of the word 'proposition'. Don't worry for now about the talk of "similarity" and "proportion" in the quotation.

[58] Scott ed., p. 31; Scott trans., p. 78. The word in square brackets is not in the Latin. But it is implied, unless mental proposition are going to be said to "correspond" to themselves.

> And I say that for the truth of a spoken proposition it does not suffice that it have a similar mental proposition corresponding to it in the mind, because that is common to every [spoken] proposition.

So we can generalize: Spoken terms, spoken propositions, and perhaps units of spoken language generally, signify corresponding units of mental language. So too, one step further removed, do the units of written language. The point then is this: Mental language is to be viewed as a full-blown language in its own right.

G. Variations of Terminology

Before I go on, I want to give you some alternatives to the terminology we have developed so far.

In the passage just quoted, Buridan refers to the mental proposition "corresponding" to the spoken proposition. And at the end of the discussion of his conclusion 6, he refers to "the concept *corresponding* to the [spoken] expression 'white man'."[59] Thus relation $\mathbf{R_2}$ is also called a relation of *correspondence*. And the same thing can then presumably be said of relation $\mathbf{R_3}$, between written expressions and spoken ones, and for that matter presumably of relation $\mathbf{R_4}$ too, between written expressions and mental ones.

In his conclusion 9, Buridan speaks of spoken and written terms as "subordinated" to concepts[60]:

> Therefore, there is to be concluded a ninth conclusion, that an utterance or inscription, taken significatively and *subordinated* to an incomplex concept, supposits for the things it *ultimately signifies* — that is, for the things that are conceived by that concept …

So $\mathbf{R_2}$ and $\mathbf{R_4}$ are also called relations of *subordination*. The same thing can be said about relation $\mathbf{R_3}$. (We'll see more of this "subordination"-talk later on.)

Likewise, in the same passage Buridan says that spoken and written terms *ultimately* signify what the concepts conceive.[61] So relations $\mathbf{R_5}$ and $\mathbf{R_6}$ are also called relations of *ultimate signification*.

All of these locutions you will find in other writers too. In short, the terminology is rather fluid, although the picture stays the same throughout.

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[59] Scott ed., p. 27; Scott trans., p. 74.

[60] Scott ed., p. 28; Scott trans., p. 75.

[61] As we shall see, this means they ultimately signify what the concepts *signify*.

H. More about Relations $\mathbf{R_1}$ through $\mathbf{R_6}$

Note that mental language is as high as you go. No one in the Middle Ages speaks about a still "higher" level of language. As a result, relation $\mathbf{R_1}$ is an *immediate* signification relation. Buridan doesn't actually say that, at least in any passage I have noticed, but that's what it is.

We have then *six* relations: $\mathbf{R_1}$ to $\mathbf{R_6}$, as in Figure 7 above (p. 70). The three relations of *immediate* signification ($\mathbf{R_1}$, $\mathbf{R_2}$, and $\mathbf{R_3}$) are basic or primitive relations. The other three are derived relations, and can be defined in terms of relations $\mathbf{R_1}$ through $\mathbf{R_3}$.

For example, a spoken term *t* bears the relation $\mathbf{R_5}$ of *mediate* signification to something *x* iff[62] it bears the relation $\mathbf{R_2}$ of *immediate* signification (subordination, correspondence) to some concept *c* that bears the relation $\mathbf{R_1}$ of *immediate* signification to *x*.

This kind of thing is what logicians call a "relative product," and symbolize like this:

$$\mathbf{R_5 = R_2 \mid R_1}.$$

The other relations may be defined in like manner. Thus:

$$\mathbf{R_4 = R_3 \mid R_2},$$

$$\begin{aligned}\mathbf{R_6} &= \mathbf{R_4 \mid R_1} \\ &= \mathbf{(R_3 \mid R_2) \mid R_1} \\ &= \mathbf{R_3 \mid (R_2 \mid R_1)} \\ &= \mathbf{R_3 \mid R_5}.\end{aligned}$$

(There are obviously several equivalent ways to define $\mathbf{R_6}$.)

I. The Primitive Relations

How are the three basic or primitive relations, $\mathbf{R_1}$ through $\mathbf{R_3}$, established? Take $\mathbf{R_1}$ first. We have already seen from Conclusion 2 of his Chapter 1 (Text **(62)**), that, for Buridan, a spoken word mediately signifies what the correlative concept signifies. But in the discussion of Conclusion 8 (Text **(63)**), he puts it differently[63]:

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[62] If you don't know this little piece of notation, get used to it now. 'Iff' just means "if and only if." It is *very* convenient.

[63] This was quoted above, p. 68. As you can tell, Buridan's discussion of that eighth conclusion is a very rich and fertile one. This is now the fifth time we have cited one or another part of it.

> Hence it is to be noted further that although an utterance immediately signifies a concept, nevertheless by means of the concept it is imposed[64] to *signify* the [things] that are *conceived* by that concept.

What he previously said the concept *signifies* he here says is *conceived* by it. Thus it appears that *a concept signifies just what it is a concept of*. In other words, relation $\mathbf{R_1}$, one of the three primitive relations in our schema, is just the relation of conceiving.

There is a close connection between the notion of a concept and the notion of an understanding. 'Understanding' translates the Latin fourth-declension noun *'intellectus'*. Like the English 'understanding', the Latin word has at least three different senses:

> (1) It can mean "understanding" in the sense of *intellect* — the power or faculty of the mind by which it understands things. While you should be very much aware of this sense of the term, it is not what I want to focus on here. Or
>
> (2) It can mean "understanding" in the sense of what the intellect *does* — that is, the *act* of understanding. In this sense, an "understanding" is the *exercising* of the power or faculty that is the "understanding" in sense (1). Or again
>
> (3) It can mean the *concept* or *notion* of the understood object. Thus we say, for instance, "I have an understanding of what you mean." Depending on your theory of concepts, you might say that an "understanding" in this sense is the *product* or *result* of an "understanding" in sense (2).[65]

Finally, Latin *'intellectus'* can also be used not as a fourth-declension noun but as the passive participle of the verb *'intellego'* (= "understand"). In many of its inflected forms, the participle is indistinguishable from the noun. In this usage *'intellectus'* simply means "understood" — that is, the understood object itself.

This variety of meaning can cause confusion if you are not aware of the possibilities. (So do be aware of them.)

Here is my reason for bringing this up. Recall our definition of signification.[66] To signify, we said, was to *establish an understanding = constituere intellectum*. Most interpreters in the Middle Ages took the term *'intellectum'* here (the

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[64] We will talk about "imposition" soon. Relations $\mathbf{R_2}$ and $\mathbf{R_3}$ are relations established by imposition.

[65] I say that depends on your theory of concepts. Ockham, for example, eventually came to adopt a theory according to which concepts just *are* acts of understanding — "understandings" in sense (2) — not the objects, products or results of such acts. But he had held a different view earlier.

[66] See p. 63 above.

accusative of *'intellectus'*) in the third of the senses just listed. And quite plausibly so — that reading seems to make the best sense.

So if concepts are signs and signify what is conceived by them (as our theory so far tells us), they are signs only in a funny and peculiar sense. They *establish* an understanding or concept of a thing only by *being* the understanding or concept of that thing. They *make us think* of a thing by *being themselves the thought* of the thing.

Concepts are thus signs in a "degenerate" sense, in the way in which we say for instance a circle is a "degenerate" case of an ellipse. It is perhaps for this reason that Buridan rarely speaks of concepts as "signifying" their objects (although he does it occasionally), but instead prefers to speak of them as "conceiving" their objects.[67]

So much for relation $\mathbf{R_1}$.

Relations $\mathbf{R_2}$ and $\mathbf{R_3}$ are different. They arise by what is called "imposition" or (somewhat less frequently) "institution." Spoken and written expressions were thus said to be *imposed* or *instituted* to do a certain linguistic duty. We find Buridan, for example, using the terminology of imposition for spoken terms in the discussion of his Conclusion 8 (Text **(63)**), and for written terms in the discussion of his Conclusion 1[68]:

> This is apparent, because masters who teach children the alphabet teach them what [it is] such letters are *imposed* on …

We'll look more at the notion of imposition later on.

J. The Sources of the Doctrine

I've already given you Augustine and especially Aristotle as sources for the definition or notion of signification we have developed so far.[69] But where did the Middle Ages get this picture of the three-fold division of language? Once again, the sources are Augustine and more especially Aristotle.

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[67] See Reina in John Buridan, "Giovanni Buridano: 'Tractatus de suppositionibus'," pp. 382–387. Nuchelmans, *Theories of the Proposition*, p. 243, says that Buridan actually *denies* that concepts signify. But we have already seen one passage (Text **(62)**) where Buridan explicitly says they do. Conclusion 7 of his Ch. 1 provides another example (Scott ed., p. 27; Scott trans., p. 74): "Therefore, seventh, it is to be concluded that not every complex concept that is the subject or predicate in a mental proposition supposits for everything it *signifies* …" (Do not worry about the term 'supposits' for now.) In Spade, "The Semantics of Terms" (p. 190), I conjectured that it was perhaps the oddity of saying that concepts "signify" that led a certain English Dominican William of Crathorn (fl. 1330–1332) to deny that there is a purely naturally significant mental language. But a closer reading of his text (*In primum librum Sententiarum*, q. 2, in William of Crathorn, *Quästionen*, pp. 152–205) makes me now doubt that this was motivating him. On Crathorn, see also Schepers, "Holkot contra dicta Crathorn," and Nuchelmans, *Theories of the Proposition*, pp. 212–219.

[68] Scott ed., p. 24; Scott trans., p. 70.

[69] See pp. 63–65 above.

For Augustine, the most extended discussion is probably in Book 15 of his *De trinitate*.[70] He doesn't talk much about written language there, but he does speak about the relation between spoken language and thought. Here is some of what he says (Text **(7)**):

> Consequently, the word that sounds outwardly is a *sign* of the word that shines within.

Again, he says (Text **(6)**):

> Thus whoever is able to understand the word, not only before it sounds but also before the images of its sounds are pondered in thought — for this is what pertains to no language (namely, one of those that are called national languages, of which ours is Latin) …

He goes on to say that anyone who can do this can begin to understand the mystery of the Trinity.

Keep in mind the point about how this "inner word" (that is, the concept) belongs to none of the "national" languages. We will come back to it.

As with the definition of signification discussed earlier,[71] Augustine is always in the background, but the main source is Aristotle. This time the relevant passage is *De interpretatione* 1, 16ª3–8 (Text **(3)**) — pay special attention to the italicized words):

> Therefore, things in speech are *symbols* of passions[72] in the soul, and things written [are *symbols*] of those that are in speech. And just as letters are not the same for all [people], neither are utterances the same. But the things of which these [utterances] are primarily *signs* are the same for all [people, namely] passions of the soul. And what the latter are *likenesses* of — [namely,] real things — are also the same.

This text circulated in the Middle Ages in Boethius' translation, which came with *two* commentaries, a shorter and a longer one. In Texts **(11)–(12)**, I've given you relevant texts from Boethius' first and shorter commentary, and in Texts **(13)–(14)**, I've given you passages from the second and longer commentary. Here is my English translation of Boethius' Latin translation of Aristotle's Greek (the emphasized words correspond to the emphasized words in the passage above (Text **(9)**)):

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[70] Representative passages may be found in *De trinitate* XV.10.19, XV.11.20, XV.12.22, and XV.27.50. (These are references to standard internal divisions of the text.) Ockham cites this discussion, for example, in his *Summa of Logic* I.1, § 6.

[71] See pp. 63–65 above.

[72] See n. 54 above on this term.

> Therefore, things in speech are *marks* of passions[73] in the soul, and things written [are *marks*] of those that are in speech. And just as letters are not the same for all [people], neither are utterances the same. But the things of which these [utterances] are primarily *marks* are the same for all [people, namely] passions of the soul. And what the latter are *likenesses* of — [namely,] real things — are also the same.

They look a lot alike, don't they? As well they should, since Boethius was an excruciatingly literal translator — virtually word-for-word. But notice one small departure in the translation. Aristotle had said that spoken words are *symbols* (σύμβολα) of passions of the soul, as written words are of speech. But later on in the same passage he says that spoken sounds are *signs* (σημεῖα) of passions of the soul. There is some question about whether Aristotle himself meant to distinguish the *symbol* relation from the *sign* relation.[74] But whatever Aristotle thought about it, notice that Boethius in his translation conflates the two, and calls them both relations by which one thing is a *mark* (*nota*) of another.

Now 'mark' is a fair translation of Aristotle's 'σύμβολον', but Boethius in his first commentary (Text **(11)**) makes it quite clear that he sees no difference between being a *mark* of something and being a *sign* of it. Thus any distinction that Aristotle might have intended is effectively obliterated by Boethius — and so for the subsequent mediaeval tradition.

Just what do you suppose Aristotle means when he says that spoken sounds are symbols of *passions of the soul*? Does he mean sense-impressions, or memory or fantasy images, or concepts as distinct from these? Or does he mean all of them? Aristotle's text is simply not clear here.

Boethius, on the other hand, is quite clear (Text **(13)**, from the second commentary). He takes Aristotle to be talking about concepts only — *intellectus*,[75] understandings. Thus, for Boethius, written words *signify* spoken words, and spoken words *signify* concepts.

Boethius goes on (Texts **(14)–(15)**), again from the second commentary), to say we are not just talking here about isolated terms, but that in fact there are three kinds of *discourse* or language, and that mental discourse is divided into nouns and verbs just as spoken and written discourse is. And, he says, all this comes from the Aristotelians (the Peripatetics, as he calls them).

This is the basis, then, for the common three-fold mediaeval division of language into written, spoken and mental language.

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[73] See n. 54 above on this term.

[74] On this question, you might want to consult Kretzmann, "Aristotle on Spoken Sound Significant by Convention."

[75] As a fourth-declension noun, 'intellectus' is spelled the same in the plural as in the singular. But the 'u' is a long one in the plural, so that it is pronounced something like "intellectoose." Sometimes, where the context leaves it ambiguous, a little long-mark is put over the 'u' in the plural: 'intellectā s. But this is merely a modern crutch for the weak, and I will not use it.

K. Natural vs. Conventional Signification

Let's back up a moment, to Aristotle's original passage in *De interpretatione* 1, 16ª3–8 (Text **(3)**). Notice that he says there that "letters" and spoken words (= utterances) "are not the same for all [people]." They differ, as Augustine would put it (Text **(6)**), according to the "national languages." (I told you we would come back to this.[76]) Thus, the Greeks say *"anthropos"* and the Latins say *"homo."* The Greeks write it in their script as 'ἄνθρωπος', and the Latins in theirs as 'homo'.

On the other hand, Aristotle goes on, the concepts *are* the same for everyone. They are, he says, likenesses of external objects, which external objects are the same for everyone. (The external world is a public one.) Concepts, then, do *not* belong to any of the "national" languages, as Augustine puts it.

This means there is an important difference between $\mathbf{R}_1$ in our schema, on the one hand, and $\mathbf{R}_2$ and $\mathbf{R}_3$, on the other.[77] $\mathbf{R}_1$ is a relation of *likeness* or *similarity*, and so does not vary from person to person, or from culture to culture. It is an ontological relation, established by nature, not by chance or convention. Hence we will see our mediaeval authors saying that the kind of signification concepts have is *natural* signification, and that mental language is a *natural* language.

On the other hand, relations $\mathbf{R}_2$ and $\mathbf{R}_3$ are not like this. They depend on the "nation," on the linguistic community. Thus we will also see authors talking about the signification of words and inscriptions as conventional (= *ad placitum*, literally "at your pleasure") signification. So too, we will see people refer to spoken and written language as a whole as artificial or conventional, in contrast to mental language, which is natural.

Be careful: In modern philosophical vocabulary, we use the these expressions quite differently. Latin and Greek are artificial or conventional languages for the Middle Ages, whereas they are referred to as "natural" languages in modern parlance, in contrast perhaps to Esperanto, or to the notational systems of *Principia Mathematica*, say, or of Frege's *Begriffschrift*, which are "artificial" languages. The latter would all count as artificial or conventional languages according to the mediaeval usage too, but so would Latin and Greek, French and Swahili; the only natural language in the mediaeval sense is mental language. Don't be confused by this difference in terminology.

Here are some passages where we find authors making this distinction between natural and conventional signification. There is nothing special about these passages in particular; I just picked them as illustrations:

> **(1)** Richard Lavenham, *Summulae logicales*, para. 7[78]: Further, it has to be noted that there is a twofold difference between mental

[76] See p. 75 above.

[77] See Figure 7, p. 70 above.

[78] Translated from Spade, "Notes on Richard Lavenham's So Called *Summulae Logicales*." Lavenham was a contemporary of John Wyclif, and so wrote probably in the 1360s. He died probably sometime after c. 1400–1403. Lavenham was the author of many works on logic and other topics, but was for the most part utterly derivative and unoriginal. For more on Laven-

terms, [on the one hand,] and spoken and written ones, [on the other]. For the first difference is that every mental term signifies naturally, but every spoken or written one signifies by convention and not naturally insofar as it is a term[79] …

(2) Ralph Strode, *Logica*, tract. 1 "De arte logica"[80]: Among these [terms], some are called mental, and they are the ones that are said to signify naturally, as is clear from Aristotle in the first book of the *De interpretatione*.[81] For by them a thing is immediately conceived. Therefore, they are called "intentions," that is, likenesses of things.

(3) Peter of Ailly, *Concepts and Insolubles*, Part I "Concepts," §§ 1–2[82]: Among terms, one kind [is] mental, another spoken, [and yet] another written. A mental term is a concept, in other words a soul's or intellective power's act of understanding. A spoken term is an utterance that signifies by convention. But a written term is an inscription [that is] synonymous in signifying with an utterance that signifies by convention. So "term" in its full generality can be described thus: A term is a sign naturally apt[83] to signify to a cognitive power, by vitally changing it, **(a)** something or **(b)** some

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ham's life and works, see Spade, "The Treatises *On Modal Propositions* and *On Hypothetical Propositions* by Richard Lavenham"; Spade, "Notes on Some Manuscripts of Logical and Physical Works by Richard Lavenham"; and Spade, "Lavenham, Richard."

[79] insofar as it is a term: Spoken and written terms may be said to signify "naturally" in the very broad sense in which anything can be said to signify whatever it makes us think of. Thus to hear a voice behind your back will make you think of the speaker (even though you may not be able to *identify* the speaker), merely because of the causal link between sounds of that kind and human vocal chords, a causal link that is natural and not at all conventional. In this very broad sense, screams and laughs may be said to "signify" naturally too. Logic, for mediaeval authors, deals with signification in a more restricted sense.

[80] Translated from Oxford, Bodleian, MS Canonici Miscellaneous 219, fol. 13ra55–58. Since the Latin text is not readily available, here it is: "Quorum [*i.e., terminorum*] quidam dicuntur mentales, et tales sunt qui dicuntur significare naturaliter, ut patet per Aristotelem primo *Perihermeneias*, quia per illas res immediate concipitur. Ideo dicuntur intentiones, id est, similitudines rerum." Strode too was a contemporary of John Wyclif and wrote around the 1360s. Parts of his *Logica* were used as textbooks at some later universities on the Continent. Although some treatises from the *Logica* were published in early printed editions, there has never been an edition of the whole thing. For more on Strode's *Logica*, see Maierù, "Le MS. Oxford, Canonici Misc. 219 et la 'Logica' de Strode."

[81] The relevant passage is *De interpretatione* 1, 16^{a}3–8 (Text **(3)**), although Strode is reading it in the light of a long mediaeval tradition of interpreting it. In the Middle Ages, the *De interpretatione* was divided into two "books." The division came right after Ch. 9, the famous "sea battle" passage.

[82] Peter of Ailly, *Conceptus et insolubilia,* fol. 2ra. See Peter of Ailly, *Concepts and Insolubles,* p. 16. The passage is the opening lines of the work. On Peter of Ailly, see also Ch. 2, p. 48, above.

[83] naturally apt: The Latin is simply *'natum'* plus the infinitive, literally 'born to'. Compare the English colloquial usage, as in "born to lose."

> things or **(c)** somehow, [either] from the imposition that [the sign] actually has or else from [the sign's] nature.
>
> In the above definition 'from the imposition that [the sign] actually has' occurs, on account of spoken and written terms and mental [ones] improperly so called,[84] which signify on the basis of imposition. 'Or else from [the sign's] nature' occurs [in the definition], on account of mental terms properly so called, which signify naturally. Now to "signify" is to represent to a cognitive power, by vitally changing it, [either] **(a)** something or **(b)** some things or **(c)** somehow.[85]

L. Subordination

The schema we have worked out above is fairly standard throughout the Middle Ages, although there were some variations on certain points.

For example, consider Ockham's *Summa of Logic* I.1, § 3. There he distinguishes the three levels of language, referring to Boethius for authority (probably to Texts **(14)–(15)**). In § 6, he refers to Augustine — to the very passage about "national" languages that is by now familiar to us (Text **(6)**).

In that § 6, he goes on to say that, while concepts cannot be uttered aloud, spoken words, which are *subordinated* to concepts, can be uttered aloud. And in § 9 of the same chapter, he says written expressions are related in the same way to spoken expressions. The point to get in all these passages is the notion of subordination.

Ockham talks about the three-fold division in several other places too, for example in his *Commentary on the De interpretatione* (Text **(35)**). There, as in his *Summa of Logic* I.1, we see that while *structurally* Ockham's set-up is the same as Aristotle's, Boethius', and Buridan's, nevertheless *terminologically* it is out of line.

Ockham calls $\mathbf{R_2}$ and $\mathbf{R_3}$ *subordination* relations. We've seen Buridan use this term too,[86] but for Ockham subordination is *not* a kind of signification relation. He agrees with everyone else that written expressions are conventionally *(ad placitum)* correlated with spoken ones, and spoken ones conventionally correlated with mental expressions. But he denies that this correlation amounts to a signification relation.

This is not just a terminological point. For signification was a notion with a fixed meaning throughout the Middle Ages, as we have seen. By denying that $\mathbf{R_2}$ and $\mathbf{R_3}$ are signification relations, Ockham is making a substantive point. He is saying that spoken words do not *make me think of* concepts, and written words do not *make me think of* spoken words. I will return to this point later on.

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[84] The notion of mental language "improperly so called" will be discussed in Ch. 4 below.

[85] With this last sentence, compare the late mediaeval definition quoted above, p. 66.

[86] See p. 71 above.

M. Evaluation and Comparison of These Views

Now that I've sketched these schemata (Ockham's and the others'), let's evaluate them and compare them with one another.

1. The Position of Written Language

First of all, what about the position of written language in these schemata? Why is it placed below spoken language, in a kind of inferior status?

The rationale here is the notion (which there is ample reason to doubt) that we don't know how to read a language we cannot speak.[87] For the most part, this was probably true in the Middle Ages, and the fact can be taken as evidence for the dominance of *spoken* language then. It is often said (rightly) that mediaeval culture was an *oral* culture.

This was true not just because relatively few people could read, and there was no printing press yet (that was invented in the early 1450s), but — even more — because those people who *could* read usually could not read *silently*.

There is an interesting passage in Augustine's *Confessions* that illustrates this point. Augustine is talking about St. Ambrose, who had the marvelous ability to read without vocalizing[88]:

> But when he read, [his] eyes were drawn down the pages and [his] heart probed [their] meaning. Yet [his] voice and tongue were quiet.

Augustine thought this was so odd that he goes on to speculate on why Ambrose would ever want to do such a thing, even granting that he *could* do it. Was it perhaps to avoid distracting those around him? Or perhaps to save his voice — after all, Ambrose was a well-known preacher. Finally, after exhausting the more obvious possibilities, Augustine in effect admits he is stumped, and says in desperation[89]:

> Nevertheless for whatever purpose he might do it, the man at least did it for a good one.

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[87] This is not the same claim as the one Buridan made in the second illustration of his *Sophismata,* Ch. 1, Conclusion 1. (See pp. 61–62 above.) There the man did know Latin; the reason he could not read the written sentence was rather that he did not know the conventional correlations between written and spoken Latin. That is, he did not know how the subordination relation worked there; he was illiterate, in other words. In the present case, however, we are talking about someone who does not know the conventional correlations between a certain spoken language and thought.

[88] Augustine, *Confessions* VI.3.3, O'Donnell ed., vol. 1, P. 60.

[89] *Ibid.* There's more to the story. See O'Donnell's commentary on this passage, *ibid.,* vol. 2, p. 345.

But whatever they thought in the Middle Ages, written language is probably *not* necessarily related to spoken language in this way. Consider, for example, Arthur Waley, the famous translator of classical Chinese texts. He did not know how to speak Chinese at all, and yet he could certainly read it with authority.

Or consider modern logical or mathematical notation. It is a relatively trivial task to construct a formula that can be readily understood when written out but is very difficult to pronounce or read aloud.[90]

In fact, we all know from our own experience that if you are trying to read quickly, then sounding out the words — even sounding them out silently without moving your lips — will only slow you down. Indeed, nowadays we regard it as a kind of abusive description of someone to say he is so stupid he can't read without moving his lips.

So the presupposition behind the place of written language in our picture seems to be a false one.

In this respect, Ockham's theory is somewhat better than the others. He still, of course, maintains the *genetic* relation of written language to spoken language. For him, a written expression *gets* its signification (what Buridan calls its ultimate signification) from the spoken expression. But it need not *call to mind* the spoken expression when we read it. To the latter extent his view does not commit him to quite so much as does the view of Boethius, Buridan and the others. But it still implies that we cannot read a language we cannot speak. Written language is still subordinated to spoken language.

I know of only two authors who quite definitely denied the genetic relation of writing to speech. One of them is Peter of Ailly[91]:

> Therefore, it should be noted first that the term 'proposition' is used analogically for a mental proposition, a spoken [one] and a written [one]. It signifies the mental one before [it does] the spoken or written one. Hence a spoken proposition and a written one are subordinated to a mental one. But a spoken [proposition] and a written [one] do not have to be subordinated to one another[92] among themselves, as many [people] maintain. For if someone

[90] It's easy to do this with a judicious use of parentheses. Here's a simple example: $(p \supset (p\Box\supset\Box p)) \supset\Box(p \supset\Box(p \supset p))$. Note that I'm talking about *reading* the notation, not *spelling* it. The expression '$p \vee q$' is *read* as "p or q"; it is *spelled* as "p wedge q," or something like that. The expression '$p \supset q$' is *read* as "if p then q," or "p only if q"; it is *spelled* as "p horseshoe q." It is interesting to observe which modern logicians read their notation and which spell it. My tentative hypothesis, based on close observation of my colleagues, is that the "readers" are more metaphysically oriented (for example, interested in "formal ontology" and the like), while the "spellers" have more sympathy with the notion of "uninterpreted calculi." But I may be wrong.

[91] Peter of Ailly, *Conceptus et insolubilia*, fol. 7va. See Peter of Ailly, *Concepts and Insolubles*, § 93, p. 36.

[92] He doesn't mean *both* ways; he means the one subordinated to the other.

> reads a written proposition or understands it[93], then [either] he understands what is ultimately signified by it or else not. If [he does] not, then such an inscription is not a proposition for him, and neither does the utterance corresponding to it signify anything to him.[94] If he does [understand what is signified by the written proposition], then the written proposition *immediately* represents a mental one to him; it does not have to represent the spoken one.

For Peter of Ailly, therefore, written expressions can be *directly* subordinated to mental ones without going through any intermediary spoken expressions.

The other author is Richard Brinkley, an English logician and theologian who wrote a recently discovered *Summa logicae* sometime between roughly 1360 and 1373.[95] Tract I of that *Summa* is "On terms in general" (= "*De terminis in genere*"), and in Chapter 5 of that tract, he says[96]:

> From these [points made above], it is clear how what some people say is without truth. They say that just as a term in speech is subordinated to a concept in the soul, so [too] a term in writing is subordinated to a term in speech. For if terms were so subordinated, then just as a term in speech cannot be understood or imposed to signify without [there being a corresponding] term in the soul, so [too] a term in writing could not be imposed to signify or be understood without [there being a corresponding] term in

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[93] I'm not sure why Peter has 'or' here, when 'and' would be more natural. Perhaps he means to contrast reading *aloud* with reading silently. After all, the upshot of his claim in this passage is that one *can* read silently without thinking of the associated sounds. But see n. 94 below.

[94] This last clause is obscure and seems to go against the whole point of the paragraph. One possibility is that Peter is thinking of reading without any vocalization at all, either aloud or silently. In that case, the reason the corresponding spoken proposition does not signify anything to the reader is just that the corresponding spoken proposition doesn't exist, and so *a fortiori* doesn't signify anything. On the other hand, see n. 93 above.

[95] On Brinkley, see Gál and Wood, "Richard Brinkley and his '*Summa Logicae*'." Brinkley was mentioned in passing in n. 4 above.

[96] Since this first tract of the *Summa* has not been edited, I here give you my provisional edition of the relevant passage of the Latin from the two known extant manuscripts, **P** = Prague, Státní Knihovna, MS 396 (III.A.11), fols. 31ra–140ra, and **L** = Leipzig, Universitätsbibliothek, MS 1360, fols. 1ra–105^{vb}. (Those are the folio numbers for the *Summa* as a whole.) The passage occurs on **P** 34^{rb} and **L** 5ra: "Ex istis patet (patet] patent ? **P**, patent **L**) quomodo non habet veritatem quod (quod] qui **L**) aliqui ponunt dicentes quod sicut terminus in voce subordinatur conceptui in anima ita terminus in scripto subordinatur termino in voce. Nam si sic essent termini subordinati tunc (tunc] *om*. **L**) sicut terminus in voce non posset (posset] potest ? **L**) intellegi nec imponi ad significandum sine termino in anima ita terminus in scripto (in scripto] inscriptus **P**) non (non] *iter*. **P**) posset imponi ad significandum nec intellegi sine termino in voce. Cui igitur natura non concessit (concessit] concessissent **P**) potentiam audiendi non posset (posset] potest ? **L**) aliquid addiscere." If you don't understand all the business in parentheses in the above passage, it's called the "*apparatus criticus*," and it records the variant readings in the two manuscripts. In most critical editions it is printed separately at the bottom of the page, but since you are *already* at the bottom of the page, I had to print it interpolated into the text itself.

> speech. Therefore someone to whom nature did not grant the power of hearing would not be able to learn anything.

Brinkley has a point, but his and Peter of Ailly's view was decidedly a minority opinion in the Middle Ages.

2. The Position of Spoken Language

Second, what about relation $\mathbf{R_2}$, the relation between spoken language and mental language? Do spoken words really signify concepts? When I hear words in speech, am I made to think of mental events?

One reason for saying yes is given by Aquinas in his *Commentary on the De interpretatione*[97]:

> And if in fact man were naturally a solitary animal the passions of the soul would be enough for him. By them, he would be conformed[98] to the things themselves in order to have knowledge of them in himself. But because man is naturally a political and social animal [instead], it was necessary that the conceptions of one man become known to the others. This is done by an utterance. And therefore it was necessary for there to be significative utterances, in order for men to live together with one another. Thus [people] who are of different languages cannot live together with one another very well.

The same idea is found in Augustine's *De doctrina christiana*[99]:

> Now *given signs*[100] are those living things give to one another, to show (as far as they are able) the motions of their spirit or any things they have sensed or understood. Neither is there any cause for our signifying — that is, for [our] giving signs — except to bring forth and get across to the mind of another what is going on in the mind of the one who gives the sign.

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[97] Thomas Aquinas, *Commentaria in Aristotelis Peri Hermeneias* I, c. 1, lect. 2. For a translation of the complete commentary, see Thomas Aquinas, *Aristotle: On Interpretation*.

[98] conformed: This is meant quite literally. According to Aristotelian-Thomist epistemology, knowledge and its object share a metaphysical *form*. Thus to acquire knowledge is to be "informed." (That's where we get the word 'information'.) This is not the place to go into the details of the theory.

[99] Augustine, *De doctrina christiana*, Martin ed., II.2, lines 1–6. Compare the translation in Augustine, *On Christian Doctrine*, Robertson trans., pp. 34–35.

[100] given signs = *data signa*. Augustine's discussion suggests that this includes more than we have been calling "conventional" signs. Laughter and groans will qualify too, and for that matter gestures. (There is nothing in the passage about sound or speech.) Nevertheless, what Augustine says here does apply preeminently to spoken language.

The basic idea then is that the job of language is to *express thought*. When I hear what a person is saying, I know what he is thinking. This point of view emphasizes the social role of language for interpersonal communication.

Ockham takes the opposite point of view. I know of nowhere Ockham actually argues that words do not in general signify concepts; he just takes it for granted that they don't. Sometimes we hear words and we aren't made to think of concepts at all; we are made to think of other things instead: rocks, trees, houses, and so on.

Walter Burley, in one of his commentaries on the *De interpretatione* (he wrote several — for this one, see Text **(34)**), agrees with Ockham, although he too gives no real argument. He is willing to *say* that words always "signify" concepts, on the authority of Boethius, but is quick to point out that this is not "signification" in the sense of "that on which the name is first imposed." In short, people do not set up language for the purpose of talking merely about their thoughts.

On the other hand, John Duns Scotus, who wrote before either Burley or Ockham, does give an argument (although he doesn't accept it) in his *Questions on the First Book of the De interpretatione*, q. 2.[101] The question Scotus asks there is "Does a name [by which he here means a *spoken* noun or adjective] signify a real thing or a species [i.e., a concept] in the soul?"

He refers to Aristotle's *De interpretatione* 1, 16ª3–8 (in Boethius' translation, Text **(9)**) — that is, the text he is commenting on — in support of the affirmative. Then he gives several arguments for the negative side, that (spoken) names do *not* signify species or concepts.[102] I have quoted the first one in the second paragraph of Text **(31)**. Scotus just points out there that we simply do *not* always think of concepts when we hear words. Sometimes we think of people or stones, or other things. The point is that this is simply an empirical fact. And that seems to be a correct.

a. The Transitivity of Signification

In his resolution of the question (Text **(31)**, last paragraph), Scotus sides with the affirmative: spoken words do signify concepts. The main point of his remarks here seems to be that signification is a transitive relation.

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[101] Text **(31)**. Be warned that the current state of Scotus' writings is a real mess. Scotus died relatively young, and many of his works were not yet in the form in which he wanted them. But it's worse than that. There are a large number of works *attributed* to Scotus that are either certainly spurious or else at least of doubtful authenticity. Some of these are perhaps by more or less reputable Scotists, and so probably contain something close to his own doctrine, but you can't rely on that. Furthermore, even the text of some of his authentic works is thoroughly mixed up with interpolations and glosses added by others. There is a committee set up (the so called "Scotus Commission") to prepare critical editions of Scotus' works, but they have for the most part proceeded very slowly, and some of their early conclusions have already been questioned and even revised. I do not intend to enter into the details of these questions here, since they are constantly changing. But you should take most of what I say about Scotus with all due caution.

[102] Remember the structure of the *quaestio*-form. See p. 57 above.

For example, we hear a word. It signifies the concept, which means that the concept comes before the mind, we think *of* it. But that concept or mental species in turn signifies (brings to mind) some external reality, so that the original word also causes us, indirectly, to think of that external thing.

This illustrates why it is important not to think of signification in modern terms, as "reference" or "meaning."[103] Reference and meaning are not transitive; signification is.

Signification, in the mediaeval sense, is a special kind of *causal* relation: to signify *x* is to make one think of *x.* And so signification is just as transitive as the relevant kind of causality is. I see a written word, for example, and it makes me think (let us say) of the corresponding spoken word. The spoken word before my mind makes me think in turn of the corresponding concept. And the concept before my mind makes me think of what it is a concept of. This seems to be the sort of thing Scotus has in mind.

The transitivity of signification, as a special kind of causality, is a point explicitly made by others as well. For example, Lambert of Auxerre[104]:

> For just as it is said that whatever is a cause of the cause is a cause of the caused, so in the [same] way it can be said that whatever is a sign of the sign is a sign of the significate.

Likewise Burley in his so called *Middle Commentary on the De interpretatione* says[105]:

> Whatever is a sign of the sign is a sign of the significate.

And again, in his *Questions on the De interpretatione*, he says[106]:

> And because whatever is a sign of the sign is a sign of the signed, therefore an utterance mediately signifies a thing. And in propositions there is a union for things[107] and not for the passions [of the soul], just as in writing there is not a union for the written letters. Now in every expression there is a union for what is ultimately signified, that is, for what is signified in such a way that it does not signify [anything further].

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[103] On 'meaning', see p. 63 above. For 'reference', it will become clear in Ch. 8 below that "supposition" is a much better candidate than "signification" is.

[104] Lambert of Auxerre, *Logica*, Alessio ed., pp. 205–206.

[105] Translated from Brown, "Walter Burley's Middle Commentary on Aristotle's *Perihermeneias*," p. 55, § 1.15. Note: Burley is not speaking for himself here, but only describing a view. Note too: A "middle commentary" is midway between a mere epitome and a full-blown phrase by phrase commentary.

[106] Translated from Brown, "Walter Burley's *Quaestiones in librum Perihermeneias*," p. 208, § 1.3. Note: Again, Burley is not speaking for himself in this passage, but only describing a view.

[107] The locution looks harder than it really is. To say there is a "union for" *x* simply means that the words are put together for the sake of talking about *x.*

Of course, given the fact that signification is transitive, and given Buridan's and Boethius' schema, according to which the primitive relations $\mathbf{R_1}$, $\mathbf{R_2}$ and $\mathbf{R_3}$ are all signification relations, it follows that the derived relations $\mathbf{R_4}$, $\mathbf{R_5}$ and $\mathbf{R_6}$ are signification relations too. Earlier we called them relations of *mediate* signification.[108] At that time, we just took the point for granted. Now we see why it holds. Note that this argument does not hold on Ockham's theory, according to which $\mathbf{R_2}$ and $\mathbf{R_3}$ are *not* signification relations. (Nevertheless, he does accept the conclusion that $\mathbf{R_5}$ and $\mathbf{R_6}$ — though not $\mathbf{R_4}$ — are signification relations. He just doesn't accept it because of *this* argument.)

3. More on the Position of Spoken Language

In the Scotist text we are looking at (Text **(31)**), Scotus seems to be siding with Boethius and Buridan. But notice that his resolution of the problem does not really answer the objection he raised at the beginning.[109] It remains as much an empirical fact as before that we don't always think of concepts when we hear speech.

In any case, Scotus takes it all back in another set of questions he wrote on the *De interpretatione*. This is the work known as the *Opus secundum* or *Second Work on the De interpretatione*. I have quoted you the relevant passage in Text **(32)**. There Scotus seems to take just the opposite point of view. There are textual difficulties with the passage, but at any rate it is clear that Scotus denies there that spoken words directly signify concepts in the mind.

But there's more. Scotus does not seem to have made up his mind on the issue. There is still another text of his, from his *Ordinatio*, an indisputably authentic work that is his commentary on the *Sentences* of Peter Lombard, edited and prepared for "publication"[110] by Scotus himself. I have translated the relevant passage as Text **(33)**. Here Scotus holds that written, spoken and mental terms all *directly* signify the same things, although there is still a relation of genetic dependence among the three. This of course is exactly what Ockham would hold shortly afterwards.

My reason for citing all these texts here is merely to show you that the question whether spoken words signify concepts — that is, whether $\mathbf{R_2}$ is a signification relation — was not one that was altogether settled in this period.

On the one hand, we have traditional view that language expresses thought; this provides motivation for an affirmative answer. On the other hand, we have the empirical fact that we simply do *not* always think of concepts when we speak or listen; this gives us the motivation for a negative answer. The difference between these two points of view is exactly the difference between Aristotle, Augustine, Boethius and Buridan, on one side, and Ockham and Burley, on the other. Scotus is on *both* sides, depending on which passage you read.

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[108] See Figure 7, p. 70 above.

[109] Text **(31)**, second paragraph.

[110] This of course doesn't mean "printing." It meant preparing a hand-corrected manuscript that he would then submit to the copyists.

Here is a little table listing the opposing teams:

Yes	**No**
Aristotle	Ockham
Boethius	Burley
Buridan	————
Scotus (in some texts)	Scotus (in other texts)

Figure 8: Do Words Signify Concepts?

4. Unanswered Questions

To some extent it must be said that important issues in this dispute were not brought out very clearly and explicitly. For example, consider the affirmative side, the view that spoken words do signify concepts? Just *whose* concepts are signified in this way?

When I hear you speak, it's not *my* concepts that I am made to think of on this theory, but yours. *Your* thoughts are conveyed to me. The real point of the "social" view of language is that words signify the *speaker's* concepts to the *hearer*. This is obscured by just saying without qualification that "words signify concepts."

Furthermore, even if words do signify the speaker's concepts to the hearer, this holds only where *the speaker is not identical to the hearer*. When I listen to myself speak, my words do not typically make me think of my own concepts. My concepts are presumably already there, and are only being *expressed* in speech. Even if you hold that sometimes our concepts are simultaneous with our words (we "think as we speak"), still it would be hard to make the case that the concepts are caused by the words that are supposed to express them.

For that matter, it would appear that neither do my own words call *anything* to *my* mind — concepts or otherwise. My words, on this "social" theory of language, are supposed to *express* my thoughts (quite apart from the additional claim that they also signify my thoughts to my audience); they do not *produce* any thoughts in me — or at least this theory gives no reason to think they do.

In short, some important lines in this dispute were not very clearly drawn.

The Aristotelian-Augustinian-Boethian-Buridanian-sometimes-Scotist view — the one that takes $\mathbf{R_2}$ as a *signification* relation — emphasizes the social role of language for intercommunication. But by itself it ignores the plain fact that we often are *not* talking about concepts but about things. The Ockhamist-Burleyite-sometimes-Scotist view, on the other hand, tends by itself to treat language as an isolated, disembodied, abstract thing, and ignores the pragmatic and interpersonal role of language.[111]

[111] This has real consequences. On Ockham's most considered theory, for example, a term can in some cases be classified as "absolute" or "connotative" only with respect to a given

N. Postscript

Why have we considered this three-fold division of language at such length? Mainly, it was in order to bring out the notion of mental language for our inspection.

First of all, it is obvious that in the schema we have developed it is mental language that is primary and basic. The properties — or at least many properties — of spoken and written language are to be accounted for by their relation to mental language. In fact, there are some grounds in the mediaeval literature for saying that what you study when you study logic is just mental language, its syntax and semantics, and the inferential relations that hold in it.

Such a notion is not altogether explicit in all the authors we have considered. It is strongly suggested by Ockham,[112] but there is no suggestion of it in Buridan that I can find. Perhaps the clearest statement of the view is in Vincent Ferrer, a late fourteenth author of a broadly Thomist persuasion.[113]

Second, it is worth pointing out that semantics in general is the theory of the relation between language and what that language is about — between language and the world. On the other hand, mental language consists of *thoughts* — concepts and judgments. Thus, by studying the semantic features of mental language, we are in effect studying the relations between concepts or judgments and the world. In short, *the semantic theory of mental language is part of epistemology*. This means that we can use the machinery of semantic theory and apply it to certain questions in epistemology. That's a nice thought.

With all that in mind, in the next chapter we shall turn to mental language in more detail.

O. Additional Reading

For additional reading on the material covered in this chapter, see: John Buridan, *Sophisms on Meaning and Truth*, Scott's "Introduction," especially §5A, pp. 22–29; *ibid.,* Ch. 1, especially the first four "conclusions," pp. 70–72; William of Ockham, *Summa of Logic,* through Ch. 1; Philotheus Boehner, "Ockham's Theory of Signification," in his *Collected Articles on Ockham*.

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user. Yet he often speaks — and so does much of the secondary literature — as if certain terms were "absolute" all by themselves, in the abstract. We will talk more about this in Ch. 7 below.

[112] See Moody, *The Logic of William of Ockham*, Ch. 2, § 1, pp. 31–38. Although Moody's book is by now more than half a century old, it is still *very* useful. Use it with caution, but treat it with respect.

[113] See Trentman, "Vincent Ferrer on the Logician as *Artifex Intellectualis*."

Chapter 4: Mental Language

A. Major Contributors to the Theory

The idea of mental discourse was by no means a late mediaeval innovation. Anyone thoroughly familiar with Aristotle or Augustine had encountered the notion there, and those who wrote commentaries on the *De interpretatione* of course had to deal with the idea directly. But for the most part, people were content to say what Boethius or Augustine had already said, and leave it at that. It was not until the early-fourteenth century that certain authors began to work out a real *theory* of mental language and to put it to philosophical use.

William of Ockham appears to have been one of the first to do this, if not the very first. His treatment of mental language is perhaps the most extensive and detailed in the entire Middle Ages. (It is certainly the most extensive and detailed discussion I know.) A little later, John Buridan also began to work out a theory of mental language. His view by and large agrees with Ockham's on the main points. But there are some important differences of detail, and Buridan's account is not nearly so detailed as Ockham's.

By 1342,[1] Gregory of Rimini had developed the theory in certain ways. (Just how original he was is not certain. We shall discuss his views below.) And in 1372, Peter of Ailly made use of both Gregory and Ockham in his own *Concepts and Insolubles*, in an ingenious application of the theory of mental language to semantic paradoxes like the Liar Paradox.

Other authors discussed mental language too, and perhaps some of them made major contributions; the detailed history of the theory is not yet known. We shall confine ourselves primarily to the four authors just mentioned, with occasional remarks about others.

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[1] The date of Gregory's *Commentary on Book I of the Sentences*. (See p. 46 above.) Note that at least some of what Buridan has to say about mental language (what he says in the *Sophismata*) is probably later than 1342. (See p. 57 above.)

B. The Conventionality of Spoken and Written Language

What is the most basic feature that distinguishes mental language from spoken or written language? Answer: Mental language is supposed to be a *natural* language, whereas spoken language and written languages are *conventional*.[2]

To say that mental language is "natural" is to say that its features are not established by choice or convention, but by nature. They're not up to us. On the other hand, not all the features of spoken and written languages are established by nature in this way; some such features are conventional. The conventions can be changed, with the result that there are different languages over time. And for that matter the conventions can vary at any one time, so that there are several distinct languages all coexisting simultaneously (like English and French).

Let's look more closely at this notion of conventionality.[3]

Many mediaevals were impressed by the fact that not only are spoken and written language "conventional" in the sense that Latin differs from French — that is, not only in the sense that there are *interlinguistic* differences that are explained by convention — but even *within* a single conventional language, you could give special meanings to certain utterances or inscriptions for certain special and perhaps temporary purposes. Consider, for example, the instantiation of variables in modern logic: "There is an x such that ϕx. Let it be a." Similarly, as Buridan points out, this sort of thing is done all the time in geometrical proofs[4]:

> For every day, some people in their disputations impose new names on things, so that an acute angle is called "A" and a straight line is called "B."

The adopting of a convention for a certain linguistic expression is called "imposition" (as Buridan implicitly just called it) or "institution."

1. Robert Fland's Extreme View

Just how far should one carry this conventional nature of spoken and written language? Some people wanted to take it very far indeed. For example, a certain Robert Fland. Let me first introduce him to you, and then I'll talk about his extreme views on conventionality.

Not much is known about Robert Fland. There is a manuscript in the town library at Bruges (that's in Belgium), containing three short logical texts with his name on them. Fland cites other people's views, and one of his own writings ap-

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[2] Recall my earlier *caveat* about the word 'natural' in this context. It does not mean what people mean nowadays by it. See p. 77 above.

[3] On this, see the discussion in John Buridan, *Sophismata*, Ch. 6.

[4] John Buridan, *Sophismata*, Ch. 6, in the discussion of sophism 1. Scott ed., p. 103; Scott trans., p. 158.

pears to have been used later by Ralph Strode.[5] On the basis of these connections, we can date his writings to between 1335 and about 1370.[6] The name 'Robert', together with the sources he used and the influence he had, suggests that he was an Englishman. But that is basically all we know about him. No one suggests that he was an especially important or innovative thinker. (Certainly *I'm* not going to suggest it.) Nevertheless, he does have some interesting things to say.

In his *Consequences*, Fland is discussing what he calls "copulative" propositions — what are nowadays called "conjunctions," propositions of the form *p & q*.[7] Here is what he says (Text **(74)**):

> A proposition is called "copulative" when a mark like 'and' joins propositions to one another, like 'You run and you are at Rome'. A proposition is called "of coupled extreme" when the mark 'and' joins terms to one another, like 'You are a man and an animal', or 'Socrates and Plato run'. For a copulative to be true when imposition is withdrawn, it is required that every part be true. But, by means of an imposition, a copulative is true when every part of it is false. For instance, if the copulative 'You are an ass and you are a nanny goat' is imposed to signify precisely that God exists, and every part of it principally signifies nothing beyond its primary signification, then that copulative is true and every part of it is false. Likewise, a copulative is false and every part of it is true, and this by means of an imposition. For instance, if the copulative 'You are a man and you are an animal' is assumed to signify precisely that you are an ass, and each of its categoricals has its primary signification, then the copulative is false and every part of it is true.

Note the use of the clause 'when imposition is withdrawn'. In this passage Fland observes that "when imposition is withdrawn" — that is, barring any *special* or what is sometimes called "new" imposition, but leaving the normal lin-

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[5] On Strode, see p. 78 above.

[6] I have edited Fland's works in Spade, "Robert Fland's *Consequentiae*," "Robert Fland's *Insolubilia*" (that paper also discusses his dates), and "Robert Fland's *Obligationes*." In the first of these papers, I remarked that in the case of each of the three attributions in the manuscript, there is a period after the name 'Robert Fland', perhaps indicating that it is an abbreviation for 'Robert of Flanders' (in short, 'Robert Fleming'). But I have more recently found the name 'Thomas Fland' in an early-fifteenth century Oxford manuscript without any mark of abbreviation, suggesting that 'Fland' was a legitimate name on its own. (For Thomas Fland, see John Wyclif, *Summa insolubilium*, p. xiv.)

[7] Mediaeval logicians did not usually call them "conjunctions" or "conjunctive propositions" because the term 'conjunction' was used for the grammatical part of speech that includes not only 'and' but also 'or' or even 'because'. It's still used that way today, so that it's the *modern* vocabulary that has the greater potential for confusion in this respect — a potential that, admittedly, isn't actualized very often in practice.

guistic conventions intact[8] — the truth of a copulative proposition *'p & q'* (and he means a spoken or written proposition) requires both the truth of *p* and the truth of *q*. (He doesn't say so, but he also means that this is a *sufficient* condition too. Mediaeval authors are frequently very lax about this.) These are the normal conventions.

But, he goes on, since language is conventional, we can adopt different or new conventions, if we want. And if we do that, we might end up with a set of conventions whereby the spoken proposition *'p & q'* is true, even though *p* itself is false and so is *q!*

He gives an example. Consider the (spoken) proposition 'You are an ass and you are a nanny goat'. It is a copulative proposition, of the form *p & q*. Now suppose we adopt a convention (an "imposition") according to which that proposition as a whole expresses the mental proposition "God exists,"[9] but each conjunct in it expresses just what it ordinarily does. In that case, both *p* and *q* are *false*, but the conjunction *'p & q'* is *true*.[10]

Or, we could do it the other way around, he says. We could have a situation where both *p* and *q* are true but their conjunction *'p & q'* is false. For example, let the spoken proposition 'You are a man and you are an animal' express the mental proposition "You are an ass," but each conjunct express just what it ordinarily does.

What is happening in both these cases is that the parts of the spoken copulative are subordinated to the mental propositions with which they are ordinarily correlated, but the whole spoken copulative is subordinated to something completely different. Spoken language is conventional, after all, and so we can set things up any way we want. What Fland is in effect emphasizing here is that 'any way we want' means *any* way we want. In particular, the mental proposition to which a compound spoken proposition is subordinated need not be determined in any way by the mental propositions to which the components are subordinated. (And of course this applies *mutatis mutandis* to written language as well.) Thus *the subordination of the whole need not be a function of the subordination of the parts*.

Of course, normally it is; Fland is not denying that. But it doesn't have to be, and we can change it if we want. Language is conventional, after all.

This passage from Robert Fland is probably the most extreme statement I have seen of the conventionality of spoken and written language. Most other authors would probably, if you pushed them, agree that, yes, you can be that "non-standard" if you want. But in fact they don't say much about that possibility, pre-

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[8] Otherwise, if there were *no* linguistic conventions imposed whatever, we wouldn't have a piece of language at all.

[9] Recall from Ch. 3, p. 61, above that when I'm trying to make distinctions, I quote *mental* expressions with double quotation marks. Unlike the distinction between written and spoken language, the distinction between either of those and mental language is a very important one for mediaeval authors, and so for us. Hence I will continue to use this convention when it matters. (When it doesn't matter, I will use double quotation marks in the normal, loose way American English customarily does.)

[10] Fland of course believed in God.

cisely because it *is* so "non-standard." Most of our authors tend to present their semantic theories within the limits of the normal conventions of imposition.[11]

For example, Buridan (Text **(70)**) gives an account of truth conditions for categorical propositions on the basis of the semantic contributions of their terms. (The theory is called "supposition theory," and we will talk about it below.) Ockham does the same thing, and in Part II of his *Summa logicae*[12] he gives an account of the truth conditions for certain *compound* propositions as functions of the truth conditions of their components. This sort of thing will not work, of course, in the kind of situation Fland is talking about. Buridan and Ockham really have no theory of truth conditions for such "funny cases." Their theories are specialized theories that apply only to a subset of all the possible cases that might arise.

2. William Heytesbury's Odd Restriction

But while most authors, if you pushed them, would probably agree that, yes, language is as radically conventional as Fland says it is, there are some odd exceptional figures.

For example, in 1335 William Heytesbury wrote his *Rules for Solving Sophisms*.[13] Chapter 1 of that work is devoted to the Liar Paradox, 'This very proposition is false'.[14] As you probably know, the problem with such paradoxical propositions is not just that they are contradictory. There is no special problem with contradictory propositions. We know how to treat them: they're just *false*. The problem with the Liar and related paradoxes is worse than that. There it ap-

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[11] Nevertheless, Fland was not alone. The *Logica magna* attributed to Paul of Venice says the same thing, and uses virtually the same examples (Paul of Venice, *Logica magna* II.3, Broadie ed., pp. 90–91):

> Note that I also say 'signifying according to the composition [of its terms]'. For it is consistent that some copulative [proposition] be false and each main part of it be true. [This is] clear. I take the copulative [proposition] 'You are a man and you are an animal'. Let the first part primarily signify you to be a man, and the second one [primarily signify] you to be an animal. Therefore, because the copulative is distinguished from these categoricals taken together — since it adds on the mark of coupling — let it primarily signify you to be an ass and you to be a nanny goat. The conclusion [then] follows.
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> Also, some copulative [proposition] is true, each categorical [part] of which is false. [This is] clear for [the copulative] 'You are an ass and you are a nanny goat', positing that the parts adequately signify in the usual way and the copulative [as a whole] signify that you are a man and that [Note: I suspect this 'that' should be deleted.] you are an animal. The conclusion [then] follows.

[12] *Summa logicae* II.32–33. Freddoso and Schuurman, trans., pp. 186–189.

[13] On Heytesbury, see Ch. 2, p. 47, above. For the date, see Weisheipl, "Ockham and Some Mertonians," p. 196.

[14] I have translated Ch. 1, with a study, in William Heytesbury, *On "Insoluble" Sentences*.

pears that we don't just have a contradictory *proposition*, but a contradiction *in our semantic theory itself*.[15]

Heytesbury's theory of these paradoxes says in effect that propositions like the Liar Paradox — in the circumstances that make them paradoxical[16] — do not mean just what they appear to. They have to mean something else, which is to say there has to be some other, "non-standard" imposition involved, even if we are not explicitly aware of it.

The details of Heytesbury's theory, and some of the difficulties it gives rise to, need not detain us here. The point at present is just that Heytesbury thinks this conclusion is inevitable. If the Liar and such propositions did mean just what they appear to, then they really *would* be paradoxical, there would be no way to avoid the paradox, and so our semantic theory really would be contradictory. But to say that our theory is contradictory is just to say that we need to reject it and adopt a better theory, one according to which the Liar and such propositions do *not* mean just what they appear to.

Notice what Heytesbury is saying here. He is saying that there are certain propositions that under certain conditions *cannot* be imposed to behave semantically as expected. But this amounts to a curious restriction on the radical conventionality of spoken and written language. We can't make propositions mean just anything we want — or at least we can't do that under all circumstances.

But this is just bizarre. Consider the proposition 'Everyone in the world who is speaking right now is uttering a false proposition'. Normally that proposition is false (typically not all speakers are doing that), but its *meaning* is quite unproblematic. It "means just what it says." Nevertheless according to Heytesbury's theory, if you should utter that proposition while everyone else in the world happened to fall silent for a moment, the proposition could no longer "mean just what it says"; it would have to mean something else. And note that this follows *whether you or anyone else realizes that the circumstances have temporarily made your proposition problematic*. The whole world might consciously and explicitly intend for that proposition to continue to mean just what it normally does. But this wouldn't make any difference; it can't do that just then. So much the worse for the "conventionality" of spoken language.

The situation with Heytesbury's theory is unusual but not unique. Although most authors agreed that the semantic features of spoken and written language were entirely a matter of arbitrary convention, some of them then cheerfully went on anyway to hold other doctrines that required restrictions on those conventions.

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[15] If you're not familiar with how such paradoxes work, don't worry about it. I'm only appealing to Heytesbury's discussion of them to illustrate a quite different point.

[16] For Heytesbury, propositions are not paradoxical (in the way the Liar Paradox is) all by themselves. There is a story that goes with them. This was called the "case" (= *casus*). ('Casus' is a fourth-declension noun, so that its plural is also 'casus', but with a long 'u'.)

C. Natural Signification

Now that we've looked at conventional language, let's look at natural language — that is, mental language.

Perhaps the most important thing that's "natural" about natural language is that its terms (namely, concepts) get their signification by nature and not by convention. We've seen this claim before, of course.[17] But now let's look at it more carefully. Recall Aristotle's *De interpretatione* 1, 16[a]3-8 (Text **(3)**):

> Therefore, things in speech are symbols of passions in the soul, and things written [are symbols] of those that are in speech. And just as letters are not the same for all [people], neither are utterances the same. But the things of which these [utterances] are primarily signs are the same for all [people, namely] passions of the soul. And what the latter are likenesses of — [namely,] real things — are also the same.

There Aristotle tells us that although spoken and written terms differ from linguistic community to linguistic community, mental terms or concepts (as Boethius interpreted the passage) do not. They "are the same for all."

This doesn't mean that everyone has exactly the same supply of concepts, since that's plainly not so; we think about and know about different things. And besides, some people I could mention appear to have a much smaller set of concepts in their minds than you and I do, gentle reader. Instead what it means is that, for example, my concept "man"[18] and your concept "man" differ only "numerically," as they said. That is, they are *exact duplicates* of one another. They do not differ in the way the English *spoken* word 'man' differs from the Latin spoken word 'homo' or from the Greek spoken word 'ἄνθρωπος', which are more than numerically different. (They don't sound at all alike.[19]) In short, what Aristotle is saying in this text is that, while we may speak and write in different languages, *we all think in the same language*.

Why is this supposed to be so?

Well, Aristotle tells us in the same passage that concepts or mental terms are likenesses of real things and that real things are just what they are, the same for everybody. A stone is just a stone, and that's the end of the matter. It doesn't change its structure or nature depending on who's thinking about it. It is "objective" in the sense of being interpersonally invariant. We all therefore live in the same world, ontologically speaking. There is no room for any sort of "ontological relativity" (to use Quine's phrase) in this Aristotelian doctrine.

Now concepts, Aristotle has just told us, are likenesses of these interpersonally invariant things. That is, the relation between a concept and what it is a concept of is a relation of similarity or likeness. What kind of similarity relation

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[17] See Ch. 3, pp. 77–79, above.

[18] Recall once again that we are using double quotation marks to quote concepts.

[19] The written words don't look alike either. Hence they too are more than numerically distinct.

this is, and whether this theory of concepts will work, we shall have to ask later. Here let's just explore some of the consequences of the doctrine.

Similarity, when it occurs, is an objective fact. There is nothing conventional about it at all. (Of course, it may be a matter of convention or cultural conditioning which similarities *matter* to us, or which ones we notice. But that is an altogether different question.) If Socrates and Plato, for example, are alike to the extent that they are both over six feet tall, then that fact does not depend on anyone's convention[20]; it is, so to speak, a fact of "nature." And it is not made any the less a fact of nature because the custom of measuring things in feet rather than, say, centimeters, is itself purely a convention of society.

So too, if I have a concept that is similar to a stone (in whatever sense of similarity is involved here), then that too, it would seem, is a fact of nature, not subject to convention. But if it is a fact of nature whether my concept is similar to the stone in the relevant sense, then it is likewise a fact of nature whether my concept is a concept *of* the stone. And therefore (since concepts signify what they are concepts of, you will recall[21]), it is a fact of nature whether my concept *signifies* the stone.

It is in this sense that concepts signify "naturally." Ockham tells us in his *Summa of Logic* I.1, § 10:

> Now certain differences are found among these [kinds of] terms. One is that a concept or passion of the soul signifies naturally whatever it signifies. But a spoken or written term signifies nothing except according to arbitrary institution. From this there follows another difference, namely that a spoken or written term can change its significate at [the user's] will, but a conceived term does not change its significate for anyone's will.

This tells us, then, in what sense the terms of mental language are supposed to be the same for everyone.

Now it requires some extra steps, but it is fairly clear that Ockham also thinks the other ingredients of mental language are the same for everyone too — not just what are called "categorematic" terms (those that can occur in subject or predicate position in propositions) but also the so called "syncategorematic" words, the grammatical particles, connectives, etc. In short, the *whole* of mental

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[20] A full treatment of this point would have to make it clear just which conventions are involved. For suppose Socrates and Plato both belong to an exotic culture in which everyone agrees that people should be as tall as possible. As a result, children are force-fed vitamins, given growth hormones, stretched on the rack, and so on. In that case, it might very well be true that either Socrates or Plato would have turned out less than six feet tall if it were not for the conventions of their society, conventions that affected their diet and therefore their growth. In that sense, it might be said that the fact that they are both more than six feet tall depends on "convention." But that is not the kind of linguistic convention we are talking about now. I leave it as an exercise to the reader to decide whether the relevant kind of convention can be characterized precisely — and if so, to do it.

[21] If you don't, go back and look at Ch. 3 again.

language is the same for everyone. We come around to the same point: *We all think in the same language*.

D. Mental Language as the Explanation for Synonymy and Equivocation

It is this fact that accounts for the possibility of translating from one language to another. Insofar as a translation is supposed to "express the same thought" as the original, we can say that a statement in one language is a correct translation of a statement in another language iff the two statements are *subordinated to the same mental proposition*.

This suggests that mental language can provide us with a general account of synonymy, not only of interlinguistic synonymy (as with translation) but of intralinguistic synonymy too. Two expressions — whether terms, whole propositions or whatever, whether from different languages or from the same language — are synonymous iff they are subordinated to the same mental expression.

I say this is *suggested*. And in fact, until quite recently, it was the way the theory of mental language, particularly in Ockham, was generally understood.[22] But as it turns out, the situation is surprisingly messy. For now, let us develop the interpretation just described. Later on, we shall see the difficulties with it.[23]

Here is one passage where Ockham talks about mental language and its connection to synonymy in speech or writing. It comes from *Summa of Logic* I.2, § 5:

> Thus also it sometimes happens that two names[24] are synonyms, and yet are of different genders and sometimes in different declensions. For this reason, one need not attribute such a multiplicity [of genders and declensions] to natural signs. Thus, any plurality and variety of such accidents[25] as can belong to synonymous names can be rightly dispensed with in mental [names].

That is perhaps not completely clear. But the point is made a little more plainly in Ockham's *Quodlibet* 5, q. 8 (Text **(51)**), conclusion 2 (= § 11)[26]:

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[22] Two papers in the secondary literature are probably most responsible for this interpretation: Trentman's, "Ockham on Mental," and my own "Synonymy and Equivocation in Ockham's Mental Language."

[23] See later in this section, but especially Ch. 7 below.

[24] As the context shows, here he means names in speech or in writing — not mental names.

[25] accidents: That is, grammatical features.

[26] What does the word *'quodlibet'* mean? Well literally it means "whatever you please." In mediaeval universities, topics were often debated, in the classroom and elsewhere, using the *quaestio*-format. The term *'quaestiones disputatae'* (= disputed questions) often refers to a collection of (heavily edited) summaries or reports of such debates by a single author. Such collections are usually focused around a single broad topic. (For example, Aquinas has a fairly large collec-

> … Therefore, one should not attribute the multitude of accidents that belong to synonymous names to natural signs [too], such as concepts, *just as there is no plurality of concepts corresponding to synonymous names*.

In these passages the claim is that if two synonymous expressions of spoken or written language differ from one another with respect to some linguistic feature, that difference is *not* reflected in mental language. The implicit reasoning appears to be that *since synonyms are subordinated to the same mental expression* (which is the point I'm trying to illustrate), it follows that if the relevant difference were carried over to the mental correlate of the spoken or written synonyms, the mental expression would have to *differ from itself*, which is absurd. For example,[27] the Latin words *'lapis'* and *'petra'* (a loan-word from Greek) are synonyms; they both mean "stone" or "rock." Yet the former is a third declension noun in the masculine, while the latter is a first declension noun in the feminine. Hence mental language lacks grammatical gender, and does not sort its nouns into different declensions. If it did, there would be nothing to prevent *'lapis'* and *'petra'* from being subordinated to distinct concepts. But Ockham's claim is that they are not.

Here is one more passage, where Ockham states the point outright, from *Quodlibet* 5, q. 9 (Text **(52)**, § 3)[28]:

> But there is no plurality in the mind corresponding to the multitude of synonymous names in speech.

Note that in all these passages, Ockham is talking about spoken or written *names* — that is, nouns or adjectives. But that synonymy is not confined to names is clear from Text **(51)**, § 16, where Ockham speaks of synonymy for spoken or written *verbs*:

> The reason [for this conclusion] is that sometimes verbs in different conjugations and of different inflections can be synonymous.

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tion of such questions called *Quaestiones disputatae de veritate* — on the notion of truth.) But twice a year, certain especially daring "masters" would conduct public disputations in which they would debate *any* topic anyone cared to bring up — in short, "whatever you please" or *"quodlibet."* The reports of these disputations were often edited by the master and "published" — circulated in manuscript form. Although the disputations were solemn and ceremonious occasions, there was no doubt a certain amount of bravado involved. A master who announced he would hold a *quodlibet* was in effect saying he would "take on all challengers." A real, live *quodlibet* was held recently at The Ohio State University, conducted by mediaevalists in the Department of Philosophy there. From all reports, it was a smashing success.

[27] The example comes from Text **(51)**, § 11. The point cannot be made well in English, which does not have a plurality of declensions or (except for pronouns) any gender that affects well-formedness.

[28] The quotation comes from one of the preliminary pro and con arguments in the *quaestio*. In general, one must be very careful about citing such passages as reflecting the author's own views. In this case, however, it is clear from the context that it does.

> Consequently, such a diversity [of conjugation and inflection] does not have to correspond to them in the mind.

All this seems clear enough. But if it is so, if synonyms are subordinated to the same mental expression, what are we to make of the following passage (*Summa of Logic* I.6, § 1):

> But, in order not to proceed in an ambiguous way, you have to know that the name 'synonym' is taken in two senses: *strictly* and *broadly*. Those synonyms are strictly so called which all users intend to use for the same [thing]. I am not talking about synonyms in this sense here. Those synonyms are broadly so called which simply signify the same [thing] in all ways, so that nothing is signified in any way by the one [synonym] unless it is signified in the same way by the other, even though not all users believe them to signify the same [thing] but rather, under a deception, they judge something to be signified by the one that is not signified by the other … I intend to use the name 'synonym' in this second sense in this chapter and in many others.

Here Ockham tells us that, in the sense in which he normally uses the term, it is possible for us to be mistaken about whether expressions are synonymous. But how can that be, if spoken and written synonyms are subordinated to the very same thought in the mind? To use the one term involves exactly the same mental events as using the other term does, so that it is hard to see how anyone could be mistaken about the terms.[29] You begin to see why things are going to get complicated.

We will have much more to say about synonymy later. But let us turn now to equivocation. Just as mental language provides an account of synonymy in spoken and written language (even if it is a problematic account), so too it provides an account of equivocation there. Here the situation is not nearly so messy as it was with synonymy, but there will still be problems in Ockham's case, as we shall discuss a little later. In any event, here is what Ockham says in his *Summa of Logic* I.3, § 3:

[29] I don't mean to suggest it is impossible to be mistaken in this way, only that it seems to be an entirely unmotivated mistake. There is a "use/mention" distinction to keep track of here. The proposition that synonymous spoken or written terms *t* and *t** are *not* synonymous, or that one of them signifies something the other one doesn't signify in the same way, is a proposition that *mentions t* and *t**. In the mind, the proposition would presumably be one that doesn't use the single concept to which *t* and *t** are both subordinated, but rather the concept *of* the term *t* and the concept *of* the term *t**. (*Those* concepts will be quite distinct, since they are concepts of different things.) Nevertheless, it is hard to see how the mind would ever have any reason to *assent* to that erroneous proposition.

> Now an utterance is "equivocal" if it signifies several [things and] is not a sign subordinated to one concept, but is instead a sign *subordinated to several concepts or intentions*[30] *of the soul*.

Thus a spoken (and presumably also a written) expression is equivocal iff it is subordinated to more than one mental expression.[31]

Ockham goes on to say this holds not only for intralinguistic equivocation, but also for interlinguistic equivocation. It is a little hard to think of good examples of interlinguistic equivocation, but for spoken language consider the Latin *'homo'* (= man[32]) and the Greek prefix 'όμο-' (= the same). For written language, consider the sentence 'Jam dies'. In English it affirms the mortality of that sweet substance one spreads on toast. (It's an odd thing to say, of course, but that doesn't matter here.) In Latin it says "Now it is day."[33] That's equivocation if I ever saw it.

In short, where the subordination relation is many-one, we have synonymy. Where it is one-many, we have equivocation.

Although it does not often arise in a language like Latin that is for the most part spelled phonetically, it is perhaps worth pointing out that similar considerations can be applied to the subordination of written language to spoken language, rather than of either written or spoken language to mental language. (That is, to relation $\mathbf{R_3}$ in Figure 7 from Ch. 3 above, rather than to relation $\mathbf{R_2}$ or $\mathbf{R_4}$.) In the case of 'lead' (the name of the chemical element) and 'lead' (the present tense of the verb) the relation is one-many. In the case of 'red' (the adjective) and 'read' (the past tense of the verb) it is many-one.[34]

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[30] This is "intentions" not in the sense of volitions, but in the sense in which phenomenology talks about "intentionality."

[31] Be careful how you think about this. A complex expression in speech (for example, the spoken proposition 'The cat is on the mat') may be subordinated to an equally complex mental expression (the mental proposition "The cat is on the mat"). (There's our double quotation mark convention again.) Since the mental expression is composed of parts, each of which is a piece of mental language in its own right, one might be tempted to say that the spoken expression is therefore subordinated to several mental expressions (namely, to each of the parts of the complex mental expression), and so would have to be counted as equivocal on the criterion just given. But that is wrong. The subordination relation relates spoken or written expression α to mental expression β. It does not (unless α really *is* equivocal) relate α to the *parts* of β, even though β may *have* parts. Warning: There is a big question whether mental expressions can have parts at all. We will talk about this later; for the present I am only trying to prevent a confusion about equivocation.

[32] That is, human being. For the male of the species, Latin has the separate word *'vir'*.

[33] This clever little example is not originally mine. But I no longer recall where I got it.

[34] The latter case is of course complicated by the fact that 'read', pronounced like 'reed', is also the present tense of the verb.

E. Synonymy and Equivocation in Mental Language

Mental language thus does a lot of work. It not only accounts for translation, but also for equivocation and synonymy in general. If this is so — if spoken or written expressions are synonymous or equivocal whenever their subordination to mental expressions fails to be one-one — then the question inevitably arises: *Is there synonymy or equivocation in mental language itself*?[35]

My answer in both cases is no. I have arguments both of the textual kind and of the *a priori*, theoretical kind.[36]

First a theoretical argument: What would equivocation or synonymy in mental language amount to? Since there is no supramental language to appeal to in the way one appeals to mental language to account for synonymy and equivocation in spoken and written language, how could it even arise in mental language?

As it stands, of course, this argument is perhaps question-begging. It assumes that the only way to account for synonymy and equivocation is by appealing to features of the subordination-relation in the way we did a moment ago. And that is far from obvious.

Let's look more closely. Take the case of equivocation first. An equivocal term is one that, in some straightforward sense I won't try to specify here, "means two different things." How can that happen with concepts?

The spoken word 'foot', for instance, is subordinated to the concept of "foot" the bodily appendage, and also to the concept of "foot" the unit of measurement.[37] As a result, it signifies equivocally, both feet of the one kind and feet of the other. Likewise, the spoken word 'bank' is subordinated to the concept of "bank" the financial institution, and also to the concept of "bank" the side of a river. As a result, it signifies equivocally, both banks of the one kind and banks of the other.

But if we had a *concept* that signified both kinds of feet (or banks), it would have to be a natural likeness of both kinds, in whatever sense of 'likeness' is involved when we say concepts are likenesses of things. Without worrying too much for now about just what kind of likeness that is, it nevertheless appears that such a concept, if it is possible at all, would not be an equivocal one but just a *broader* univocal concept — a rather odd one, no doubt, but not equivocal in any event.

The distinction I am drawing here is a little (but only a little) like the distinction between the word 'pen', which equivocally means both the tool for writ-

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[35] I have discussed this question in detail in Spade, "Synonymy and Equivocation in Ockham's Mental Language."

[36] Let me warn you that most of what I am going to be saying here applies mainly to Ockham. Buridan has remarkably little to say about the machinery of mental language. What he does say has to be gleaned piece by piece from remarks he makes in passing.

[37] Historically, these two uses of the word 'foot' are connected, to be sure. But that doesn't spoil the example. The concepts are distinct anyway.

ing with ink and also the fenced enclosure for animals,[38] and the term 'tool for writing with or else a fenced enclosure for animals', which means exactly the same things but is not equivocal at all; it's just a broader univocal term.

A somewhat similar theoretical argument can be given in the case of synonymy. The term 'rock' and the term 'stone', let us say, are synonyms. They are subordinated to the same concept, which is a natural likeness of all stones (rocks) in the relevant sense. Could we have two concepts that were more than numerically distinct — that is, were not exact duplicates of one another, but differed in form or structure, in the way 'rock' and 'stone' differ in form and structure — could we have two such concepts and yet have them be concepts of exactly the same things? (We want the two concepts to be more than numerically distinct if we are going to talk about synonymy in any interesting sense. In a way, I suppose, we can say that two occurrences of the spoken term 'dog' are synonymous, but that is not the kind of synonymy that we are interested in. So too for concepts; we are asking about a kind of synonymy that involves more than mere repetition.)

I don't see how this could be possible, although here my argument is perhaps not as strong as the previous one. I think the kind of "similarity" account of concepts that Ockham and others have in mind will require that two concepts are concepts of exactly the same things only if they bear exactly the same kind of relevant similarity relations to exactly the same things — that is, only if in form or structure they are relevantly like exactly the same things in exactly the same ways, and so only if they differ only numerically. Perhaps there is some way around this conclusion, but I do not see what it is.

I have another more or less *a priori*, theoretical argument for this conclusion, that there is no synonymy in mental language. We'll look at it later in this chapter, when we turn to the question what goes into mental language.[39]

In the meantime, let's consider some textual arguments. In the case of synonymy, we have already heard Ockham tell us that spoken or written synonyms do not correspond to synonymous concepts in the mind.[40] Strictly speaking, of course, these texts do not say there are no mental synonyms at all; they only say in effect that if there are mental synonyms α and β, there are no spoken or written synonyms subordinated to them. But since spoken or written language gets its semantic properties from mental language,[41] if there were terms *x* and *y* subordinated to α and β respectively, *x* and *y would* be synonyms. So these passages in effect mean that if there are pairs of mental synonyms, at least one concept in each pair will have no spoken or written term subordinated to it! But if there are mental synonyms, it would be easy to violate this odd claim. Since the subordination relation is thoroughly conventional and subject to revision, let's just stipulate that the spoken or written terms *x* and *y* are subordinated to the mental synonyms

[38] And other things as well. For instance, it also means a state or federal prison. But let's not make the example any more complicated than necessary.

[39] See p. 113 below

[40] See pp. 98–99 above.

[41] We have not really developed this point fully, but you are already in a position to see pretty much how it works.

α and β. And there we have it. To summarize: The texts where Ockham says that spoken or written synonyms do not correspond to mental synonyms, combined with the view that the subordination relation is completely conventional and revisable, imply that there is no synonymy in mental language. (On the other hand, don't forget *Summa of Logic* I.6, § 1,[42] which throws this whole picture into doubt.)

For equivocation, there is more direct textual evidence. Consider Ockham's *Summa of Logic* I.13, § 2:

> First, you must know that only an utterance or other sign instituted by convention is equivocal or univocal. Therefore, an intention of the soul, or concept, is neither equivocal nor univocal, properly speaking.

That's pretty clear. But I should warn you that the text concerns only equivocal terms.[43] That is, there are no equivocal terms (= concepts) in mental language.

But what about propositions? After all, in spoken and written language, we find certain propositions that are equivocal or ambiguous even without containing any equivocal terms. For example, consider the proposition 'The killing of tyrants is justified'. Does this mean that it's permissible to kill tyrants, or does it mean that the killing they do is justified?[44] The proposition is ambiguous, and yet no term in it is equivocal (or if it is, its ambiguity doesn't enter in here).

Aristotle had distinguished these various kinds of ambiguity in his *Sophistic Refutations*,[45] and the mediaevals of course inherited these distinctions. Strictly speaking, equivocation was a matter of ambiguous terms. When it is ambiguous propositions we are talking about, that was called "amphiboly." The terminological point is probably not all that important (and wasn't always observed in practice anyway), but you should be aware of it.

I draw your attention to this distinction, because while Ockham's text in *Summa of Logic* I.13, rules out equivocal terms in mental language, it says nothing at all about mental propositions.

This is significant, because certain things Ockham says elsewhere will entail that this kind of ambiguity — ambiguous or amphibolous propositions — *is* present in mental language. There are two main contexts where this happens: **(a)** in part of Ockham's theory of supposition, and **(b)** in his theory of truth conditions for tensed and modal propositions. (Interestingly enough, Buridan's theory in these two areas does not have these implications.)

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[42] See p. 99 above.

[43] Paragraph 1 of the chapter makes it clear that the entire discussion is only about terms.

[44] For the grammarians among you, this example neatly illustrates the difference between the "objective genitive" and the "subjective genitive." Although 'killing' is a gerund (a verbal noun), if it were converted into a finite verb would 'tyrants' be the subject or the direct object of the verb?

[45] *Sophistic Refutations* 4, $165^{b}30$–$166^{a}23$.

We'll look at all this later on. For the present, let's just remark that although Ockham does say things that imply the presence this kind of propositional ambiguity in mental language, this violates what is probably his "better doctrine." In other words, there is a conflict here, and it is my opinion that Ockham should not have allowed *any* kind of equivocation or ambiguity in mental language.

For recall one of the arguments I gave you a short while back, about the term 'foot'.[46] That argument was about equivocal terms, but the same kind of argument can be made for propositions too. Consider once again 'The killing of tyrants is justified'. That *spoken* proposition is ambiguous, and so is subordinated to (at least) two mental propositions. The one mental proposition is true under one set of circumstances or truth conditions, and the other one is true under another set of circumstances or truth conditions. Thus the subordinated spoken proposition is true *in one sense* under the one set of truth conditions, and true *in another sense* under the other set of truth conditions. That is why it is ambiguous, after all.

Now I do not see how this sort of situation could arise in mental language. We could, of course, have a mental proposition that was true under the one set of circumstances *or* under another set of circumstances. But in that case, the proposition would simply have a disjunctive set of truth-conditions, which is a quite different thing from being ambiguous. (If it weren't, any old disjunctive proposition would be ambiguous.)

What I have given you here are general considerations against allowing any kind of ambiguity or equivocation whatever into mental language, despite what Ockham says about certain kinds of ambiguous mental propositions. When we come to talk about the kinds of ambiguous propositions Ockham does allow into mental language, I'll have some additional arguments against some of those cases, arguments independent of these general considerations — in other words, arguments that Ockham shouldn't have said what he did.

1. Mental Language and Fregean Senses

Let me point out an obvious parallel that may already have struck you. The theory of mental language seems to play much the same role as Frege's theory of "senses."[47] Both theories give us an account of synonymy and equivocation. (For Frege, synonyms have the same sense, whereas equivocals have more than one sense.[48])

It is therefore worth pointing out that there are also important differences between the two theories. Concepts are *not* Fregean senses.

(1) First, Frege never had anything like a "language of senses." The senses of terms are not themselves terms in some

[46] See p. 101 above.

[47] See, for example, his papers "On Sense and Reference" and "The Thought."

[48] For some further considerations along this line, see Normore, "Ockham on Mental Language," § 1.

"sense-language" in the way concepts are terms in mental language.

(2) Concepts are private and mind-dependent, at least on the theories of concepts held by the authors we will be concerned with.[49] But Fregean senses are public and not mind-dependent.

F. The Ingredients of Mental Language

Now that we've seen some of the things that do not occur in mental language, let's look at what does occur there. In short, what goes into mental language?

As usual when it comes to mental language, Buridan doesn't have much to say about this. But Ockham does. There are two main discussions of this in Ockham:

(a) *Summa of Logic* I.3 (on the correspondence between spoken and mental terms).

(b) *Quodlibet* 5, q. 8: Do all the grammatical accidents[50] of spoken terms belong to mental terms [too] (Text **(51)**).

Let's start with the former. Here Ockham says (§ 1) that there are parts of speech in mental language just as in spoken language — nouns, verbs, adjectives, prepositions, etc. He says the same thing in Text **(51)**, § 5[51]:

> As for the first point, I say that just as among spoken and written terms some are names, [while] others [are] verbs, others pronouns, others participles, others adverbs, others conjunctions, [and] others prepositions, so [too] among mental concepts some concepts are names, others [are] verbs, others adverbs, others conjunctions, [and] others prepositions. This is clear from the fact that for every spoken expression, true or false, there corresponds some mental proposition put together out of concepts. Therefore, just as the parts of the spoken proposition that are imposed to signify things on account of the necessity of signification or expression (for it is impossible to express all [things] by means of verbs and names alone that can be expressed by means of [them together with] the other parts of speech) are distinct parts, so [too] the parts of the mental proposition that correspond to utterances are distinct, to make distinct true and false propositions.

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[49] This is true even on Ockham's earlier *"fictum"* theory of concepts, as described in Adams, *William Ockham*, Ch. 3.

[50] That is, grammatical properties.

[51] Peter of Ailly agrees. See Text **(76)**.

In the passage from *Summa of Logic* (§ 2), he goes on to voice some doubts about whether participles and pronouns are found in mental language. In Text **(51)**, §§ 18–19, he says a little more about the question of participles, but doesn't mention pronouns there at all. Let's look at these doubts more closely.

(1) *Participles*: The idea here is that a proposition like 'Socrates runs' amounts to (is synonymous with) 'Socrates is running', where 'running' is the participle.[52] Hence (since there is no synonymy in mental language), we cannot find both statements there. Ockham suggests that the participle can be eliminated in favor of the verb.

Ockham's hesitation here has always puzzled me. Even if it is true that all verbs (except the copula[53]) can be expanded into a copula plus a participle,[54] why should this suggest that mental language does away with participles in favor of verbs? Why not the other way around? After all, we are still going to need a copula for propositions like 'Every man is an animal'.

Furthermore, while it is perhaps true that participles in *predicate* position (that is, after the copula) can be replaced by verbs, participles are used in other ways too — as adjectives (for example, in the now seldom-seen phrase 'Yankee imperialist *running* dog') — and it is perhaps not obvious that they can in all cases be done away with. If they can, it would presumably be by expanding them into relative clauses ('Yankee imperialist dog *that runs*.) But that requires the use of relative pronouns, and Ockham expresses doubts over whether there are pronouns in mental language. Let us then look at the question of mental pronouns.

(2) *Pronouns*: Ockham is probably thinking here of pronouns that stand in for their antecedents. These are sometimes called "pronouns of laziness." For ex-

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[52] Now, gentle reader, it's time for a short grammar lecture. A participle is a verbal *adjective*; a gerund is a verbal *noun*. In English the distinction is obscured by the fact that the two forms are identical. Thus 'running' may be a verbal adjective (a participle), describing those who run. But it may also be used as a verbal noun (a gerund), referring to what runners do. Consider, for example, the difference between 'the *living* and the dead' (participle) and 'Summertime, and the *living* is easy' (gerund). Here's a quick way to tell which you have in any given case: If you can substitute the infinitive without a change of meaning (even if the result is not very elegant), you have a gerund, not a participle. (English gets this feature from Latin, which has no special form for the nominative of the gerund, and regularly uses the infinitive instead.) Thus 'Summertime, and to live is easy' (or perhaps more smoothly, '… and it is easy to live') is all right, but 'Socrates is to run' doesn't mean the same as 'Socrates is running'. If it means anything at all, it means something like 'Socrates is about to run' or perhaps 'Socrates is supposed to run'. And while we're on the topic, I might as well tell you that the correct adjectival form of 'gerund' is 'gerundial' — *not* 'gerundive', as people sometimes say. The latter refers to a quite different syntactical construction, the future passive participle.

[53] Even the copula, if you don't mind an infinite regress.

[54] This claim has been the object of much abuse. It is associated with the so called "two name" theory of predication according to which predication always involves a copula that links two "names" — nouns or adjectives (including verbal adjectives). Peter Geach, for example, in his "History of the Corruptions of Logic," opines in typically overblown fashion that "Aristotle's going over to the two-term theory was a disaster, comparable only to the Fall of Adam" (p. 47). But for the present the question is not whether it is advisable to construe all propositions this way — whether it is misleading or obscures important logical points. The question is only whether it is possible to do it, by force if necessary. And I know of no very persuasive argument against *that*.

ample, consider a common mediaeval example: 'Socrates runs and he argues'. This is plainly synonymous with 'Socrates runs and Socrates argues'. So we don't need a separate pronoun here; the proper name can just be repeated.

Nevertheless, I don't see how Ockham can hope to get rid of pronouns entirely in mental language. Consider the use of pronouns for quantificational cross-reference. For example, 'Someone who plays wins'. The pronoun 'who' is not a "pronoun of laziness" here, and cannot be done away with in any obvious way.

Also, what about "demonstrative" pronouns, as in the proposition '*This* is red'? Ockham's epistemology includes a theory of what is called "intuitive cognition" of individuals. Acts of intuitive cognition may serve as the subjects of singular mental propositions.[55] In at least some such cases, it is hard to see how they do not amount to mental demonstrative expressions.

Ockham's hesitations, therefore, are a little perplexing, both about mental participles and about mental pronouns.

G. Common and Proper Grammatical Accidents

While Ockham says that mental language reflects spoken and written language to the extent that it too has parts of speech, and even (apart from the two doubtful cases we have just discussed) *the same* parts of speech, nevertheless there are other grammatical features of spoken and written language that do not carry over into mental language.

Here Ockham's *Quodlibet* 5, q. 8, gives the fuller account.[56] In that question he distinguishes two main kinds of grammatical "accidents" — that is, grammatical properties — of spoken (and written) words: "common" accidents and "proper" ones. We'll see in a moment why they are so described.

First, let me just give you a kind of list drawn from this passage: To begin with, for *names* (= *nomina* = nouns and adjectives, including verbal nouns and verbal adjectives), the "common" accidents are (Text **(51)**, §§ 7–10):

> Case — For example, 'dog' is in the nominative case, whereas 'dog's' is in the possessive. (English also has an "objective" case, but it only shows up for the masculine and feminine pronouns.[57])
>
> Number — For example, 'dog' is in the singular, but 'dogs' in the plural.
>
> Comparison — This applies only to adjectives and adverbs. For example, 'tall' (positive), 'taller' (comparative), 'tallest' (superlative).[58]

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[55] See Adams, *William Ockham*, Ch. 13, especially pp. 530–531.

[56] See also Peter of Ailly in Text **(76)**.

[57] So, strictly speaking, I suppose 'dog' might have been in the "objective" case instead.

[58] In *Summa of Logic* I.3, § 6, Ockham mentions a doubt about whether comparison is found in mental language, but he doesn't say what that doubt is. In any case, he doesn't indicate any such doubt in the later *Quodlibet* 5, q. 8 (Text **(51)**, § 7). Perhaps he had in mind the elimina-

> Quality — I have not been able to determine what grammatical property this is supposed to be.[59]

Still confining ourselves to names only, here are the so called "proper" accidents (Text **(51)**, § 11):

> Gender — In English, this shows up mainly in the personal pronouns, although we do have some quaint old suffixes that serve as feminine markers ('aviatrix', 'drum majorette'). In Latin, grammatical gender is much more important for syntax. Thus *'sol'* (= sun) is masculine, *'luna'* (= moon) is feminine, and *'lignum'* (= wood) is neuter.
>
> Declension — We do not have this in English. Latin has five declensions for nouns and three for adjectives. Thus *'sol'* is in the third declension, *'luna'* is in the first, and *'lignum'* is in the second. The case-endings for nouns and adjectives will vary to some extent depending on which declension they are in. Note that declension here is not the same as case (which was one of the "common" accidents listed above), even though we say we are "declining" a noun or adjective when we inflect it in its various case-forms. The "declensions" in Latin are: first, second, third (and for nouns, fourth and fifth). The "cases" are: nominative, vocative, genitive, dative, accusative, ablative, and a vestigial locative that survives as a separate form in only a few words.

For verbs, the "common" accidents are (Text **(51)**, § 15):

> Mood — In Latin, the indicative, infinitive, imperative, and subjunctive moods are distinguished.
>
> Voice — This is just the familiar active or passive voice.[60]

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tion of separate comparative and superlative forms in favor of the construction 'more' + the positive degree and 'most' + the positive degree. Latin can do this just as English can. For another attempt to eliminate the comparative and superlative degrees of adjectives in this way, see Richard Lavenham's treatment, discussed in Spade, "Five Logical Tracts by Richard Lavenham," pp. 91–92.

[59] In classical grammar, 'quality' sometimes referred to the mood of a verb. But we're talking about names here, not verbs. The editors of Ockham's *Summa logicae* suggest (p. 13 n. 3) that Ockham has in mind the distinction between proper names and "appellative" or common ones. Freddoso in William of Ockham, *Quodlibetal Questions,* p. 426 n. 34, suggests that by 'quality' Ockham means to distinguish "affirmative" from "negative" concepts like "infinite." But while the term 'quality' is regularly used to refer to the affirmativeness or negativeness of whole propositions (see Ch. 2, p. 14, above), I have never seen it used in this way for single terms. So in the end, I don't know what Ockham is talking about here. See also n. 63 below.

[60] Ockham also allows the "middle" voice into mental language (*Summa of Logic* I.3, § 8). Latin has no middle voice, but Greek does. It is frequently (but by no means always) reflexive in meaning. Why Ockham thinks it is needed in mental language, since Latin itself doesn't have it,

> Person — The familiar first, second or third person.
>
> Number — Singular or plural.
>
> Tense — In English, past, present, future, and the various "perfect" tenses. In Latin, present, imperfect, future, perfect, pluperfect, future perfect.

The "proper" accidents for verbs are (Text **(51)**, § 16):

> Conjugation — Like declension, we do not have this in English. Latin divides verbs into four conjugations, with the third admitting of some subgroups. For example, *'amo'* (= I love) is in the first conjugation, while *'moveo'* (= I move) is in the second. The inflected endings of the various verb-forms will vary somewhat depending on which conjugation a verb is in.
>
> Inflection (= *figura*) — I have not been able to find out exactly what grammatical feature this is supposed to be.[61]

With this list in hand, Ockham in effect draws a general conclusion[62]: All the common accidents of names and verbs are found also in mental language — that is why they are called "common," no doubt — but the proper ones are not. In *Summa of Logic* I.3, § 6, and again in *Quodlibet* 5, q. 8 ((Text **(51)**)), § 10, he says there is a doubt about whether the common accident "quality" is found in mental names. But, since I can't satisfy myself about what 'quality' means here, I don't know what he is worried about.[63]

1. Geach's Criticisms of Ockham's Theory

Setting that worry aside, it is clear that for Ockham, mental language looks a great deal like Latin. This is so true, in fact, that some people thought it was a suspicious fact. For instance, Peter Geach did. In his *Mental Acts*,[64] Geach criticizes Ockham on exactly this point.

I don't know. It is my personal opinion that the Greek middle voice is an invention of a malign demon for the purpose of tempting innocent souls to despair.

[61] Wey (the critical editor), in William of Ockham, *Quodlibeta,* p. 512.109, does not comment on the word. Freddoso, in William of Ockham, *Quodlibetal Questions,* p. 428 n. 41, suggests that Ockham might be referring to the distinction between deponent and non-deponent verbs. His suggestion is plausible, but I cannot verify it.

[62] I say "in effect" because he divides the claim into four subclaims. See Text **(51)**, §§ 7, 11, 15–16.

[63] See n. 59 above. With respect to the suggestion by Ockham's editors, I hardly think Ockham would want to do without the distinction between proper and common names in mental language, or that there could be much doubt about it.

[64] Geach, *Mental Acts*, § 23 (pp. 101–106).

Geach seems to think Ockham's only criterion for what does and what doesn't go into mental language is based on synonymy. For example[65]:

> Ockham's criterion for transferring Latin grammatical terms to Mental was very simple-minded. Nouns of different declensions, or verbs of different conjugations, may be synonyms, and then presumably correspond to the same Mental noun or verb; so there is no reason to ascribe differences of declension or conjugation to Mental words. But a change of case or number or voice may quite alter the sense of a Latin sentence; so Mental words must have case, number, and voice.

Thus, the grammatical features that do not go into mental language are just those with respect to which synonymous words can differ. All others, presumably, do go into mental language.

Now we've seen that synonymy is indeed discussed at some length in *Quodlibet* 5, q. 8 (Text **(51)**), and more briefly in *Summa of Logic* I.3. So there is some basis for Geach's remark.

Geach also seems to think that the whole purpose of the theory of mental language was to explain or ground the various features we find as a matter of fact in Latin. Thus, he says[66]:

> He [Ockham] merely transfers features of Latin grammar to Mental, and then regards this as explaining why such features occur in Latin — they are needed there if what we say inwardly in Mental is to be outwardly got across to others in Latin. But clearly nothing is explained at all.

Both these points are wrong — both the claim that Ockham's only criterion for what does and does not go into mental language is based on synonymy, and the claim that the whole purpose of the theory of mental language was to account for the facts of spoken language. John Trentman was the first to argue this point (correctly, in my opinion).[67]

Geach probably based his criticisms on *Summa of Logic* I.3, where what is going on is not so plain as it is in *Quodlibet* 5, q. 8 — although it's there if you're willing to look for it. Things are clearer in the *Quodlibet* passage, Text **(51)**. Ockham's real basis for deciding what does and what does not go into mental language is this: *Mental language has exactly those features of spoken (or written) language that affect the truth values of propositions*. That is why case, number, comparison, mood, voice, person and tense are all are found in mental language, whereas the distinctions of gender, declension and conjugation are not. Thus, the

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[65] *Ibid*., p. 102.

[66] *Ibid*.

[67] Trentman, "Ockham on Mental." This seminal paper has influenced a whole generation of mediaevalists in their thinking about Ockham's mental language. Many of the views I shall develop below are derived from reflection on this paper.

fact that a verb is in the first conjugation, for example, makes no difference whatever to the truth or falsehood of the proposition it occurs in. But the fact that it is in the future tense, say, may affect its truth or falsehood very much.

Here we see why the discussion of synonyms came up in the first place. Synonyms can differ only in those features that do not affect truth or falsehood. Otherwise, synonyms would not be everywhere intersubstitutable *salva veritate* — and so would not be synonymous. These features turn out to be exactly the ones Ockham calls "proper accidents" of spoken and written names and verbs.

Note that the kind of intersubstitutability we are talking about here is very strong indeed. The account we gave of synonymy, in terms of subordination to the same concept, means that synonyms are intersubstitutable *even in otherwise opaque contexts*.[68]

Opaque contexts are contexts where substitution of identicals may fail.[69] For example:

> The number of planets = nine.[70]
>
> Now necessarily nine is greater than seven.
>
> But it is not necessary that the number of planets is greater than seven. (There might have been only five, say.)

Or: The author of *Waverley* = Sir Walter Scott.

> King George wondered whether Scott was the author of *Waverley*.
>
> But King George certainly did not wonder whether Scott was Scott.

Modal contexts (necessity, possibility) and epistemic contexts (knowledge, doubt, wondering) are standard examples of "opaque contexts," where substitution of identicals may fail, as the examples show.

But we are not talking for now about terms that just happen to be names of the same (identical) thing; we're talking about synonyms. If the term 'the author of *Waverley*' and the term 'Sir Walter Scott' were synonymous in the sense of being subordinated to the same concept in King George's mind, then he could not possibly have wondered whether Scott was the author of *Waverley*. So too, it seems likely to me, in modal contexts — although you'd have to tell a longer story there.

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[68] But always remember that recalcitrant passage in *Summa of Logic* I.6, § 1 (see p. 99 above).

[69] If you are not familiar with the vocabulary or problems of opaque contexts, a good introduction may be found in Quine, "Reference and Modality," especially pp. 142–159.

[70] Yes, I know, recent astronomical developments have suggested more. But I am being traditional here and throughout.

In fact, the only "opaque context" I can think of where synonyms cannot be freely intersubstituted *salva veritate* is quotation. For example, suppose 'rock' and 'stone' are really synonymous. Then we cannot argue:

> 'Rock' has four letters.
>
> Therefore, by substitution, 'stone' has four letters. (It doesn't; it has five letters, as you can tell by inspection.)

I think it would be wrong to try to make too much of this fact. I realize that, in some circles, quotation has been taken as a kind of paradigm of opaque contexts.[71] But while that may be all right for heuristic purposes, it would be a grievous mistake to suppose that deep mysteries of modality and epistemology can be illuminated very much by what, after all, amounts to a mere typographical convention — and a relatively recent one at that. (There was no quotation-mark convention in the Middle Ages, although they sometimes used other devices to accomplish the same end.[72])

Let's back up a little and look again at Ockham's criterion for what does and what does not go into mental language: *Mental language has exactly those features of spoken (or written) language that affect the truth values of propositions*.

We might agree with Geach that mental language, as Ockham describes it, looks much too suspiciously like Latin. But the general criterion seems to be a reasonable one, even if Ockham may have applied it a little too freely. The basic idea is that mental language is to be a kind of ideal language, which has only those features it needs to enable it to discern the true from the false, to describe the world adequately and accurately. Other features of spoken and written language are there only for style, for decoration, or perhaps for economy (that is, for the sake of brevity or abbreviation). They serve a basically rhetorical purpose, and are not at all needed to distinguish truth from falsehood. Hence, they are not found in mental language.[73]

Style and decoration (and, for that matter, the decision to be concise rather than verbose) are matters subject to one's will. They are matters of art and con-

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[71] Quine does this, for example, in "Reference and Modality."

[72] As we shall see in Ch. 8, below, "material supposition" does much of the work of the modern quotation-mark convention. (But there are important differences.) Sometimes too in late mediaeval manuscripts, the particle *'ly'* (or *'li'*) is put before word or expression that is meant to be quoted. This particle is related to French *'le'* and derived from Latin *'ille'*, which came to be used as something approximating a definite article. Somewhat similarly, Leibniz occasionally uses the Greek definite article 'τὸ' as a quotation device. (See, for example, his *Disputatio Metaphysica de principio individui*, p. 19: "Per τὸ formaliter intelligent differe ratione" [= "By 'formally' he understands differing by reason"].) In this connection, recall how Plato sometimes used the article 'τὸ' when he wanted to refer to the Forms. As quotation markers, these devices suffer from ambiguity. One is never sure just how much is intended to be included in the quotation; they tell you where the quotation begins, but not how far it extends.

[73] See, for example, Ockham's *Summa of Logic* I.3, § 2, and *Quodlibet* 5, q. 8 (Text **(51)**), §§ 2 & 20.

vention, and so belong only to conventional language. On the other hand, what is true and false is not a matter of convention, but instead of matter of fact — of nature. So too, Ockham thinks, which features of language are needed to distinguish the true from the false is not matter of convention, but a matter of nature. Those features are found in mental language.

Hence Geach's second point is also not well taken. The purpose of the theory of mental language is not to explain Latin syntax, but rather to get a lean, no-frills language adequate for a true description of the world — and for no other purpose.

Notice that if this really is the point of the theory, then we have an additional argument that there is no synonymy in mental language. We don't need synonyms there; they do not affect truth values.[74]

This picture of mental language as more or less like the early-twentieth century notion of an "ideal," logically perspicuous language (for example, in the early Wittgenstein) has been a very influential one in our understanding of what Ockham was up to with his mental language. It is a picture first articulated by John Trentman.[75] But it would probably be a mistake to push the analogy too far. After all, in the passages we've looked at, Ockham is not saying anything explicitly about the overall "purpose" of "function" of mental language. (He doesn't say anything about that anywhere, so far as I know.) All he is strictly talking about is the "grammatical accidents" of individual words in mental language; the rest is extrapolation. I leave it to the reader to puzzle out whether such an extrapolation is a reasonable one. If not, do you have any other suggestion for what the theoretical purpose of Ockham's mental language was?[76]

H. The Structure of Mental Propositions

So far, I've only told you what kinds of terms go into mental language, and what their grammatical features are. But what about mental propositions? What is their structure?

Ockham many times says explicitly that mental propositions are composed, made up, of mental terms — that is, of concepts. He says it for example in *Summa of Logic* I.1, § 6:

> A conceived term is an intention or passion of the soul naturally signifying or consignifying something [and] apt *to be a part of a mental proposition*…

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[74] Recall that I gave you an *a priori* argument earlier that there could not be two concepts that are more than numerically distinct and yet are concepts of exactly the same things; they would have to be like or similar to exactly the same things in exactly the same ways. I said at the time (p. 102 above) that I had another argument. Here it is.

[75] See Trentman, "Ockham on Mental."

[76] The picture I have sketched has already begun to be questioned. See, for example, Tweedale, "Ockham's Supposed Elimination of Connotative Terms and His Ontological Parsimony."

Later on in the same paragraph, he says:

> Thus, these conceived terms *and the propositions put together out of them* are the "mental words" that Blessed Augustine, in *De trinitate* XV,[77] says belong to no language because they abide only in the mind and cannot be uttered outwardly, although utterances are pronounced outwardly as signs subordinated to them.

And again in *Quodlibet* V, q. 8, (Text **(51)**), § 5:

> … for every spoken expression,[78] true or false, there corresponds some mental proposition *put together out of concepts*.

Buridan too seems to have the same view. For example, *Sophismata*, Ch. 1, conclusion 6[79]:

> To this, it is to be replied by positing a sixth conclusion, that a simple concept, if it is the subject or predicate in a mental proposition, supposits for the thing itself that is conceived by it.

Here he talks about concepts as being in "subject or predicate position" in a mental proposition. He talks the same way in Ch. 1, conclusion 7[80]:

> Therefore, seventh, it is to be concluded that not every complex concept that is the subject or predicate in a mental proposition supposits for everything it signifies …

Again, in Ch. 1, the reply to the third sophism, Buridan talks about how the intellect forms a mental proposition out of two occurrences of the mental term "God," by adding a mental copula, resulting in the proposition "God is God"[81]:

> On this point it seems to me it must be noted that the propositions 'God is'[82] and 'God is God' are very different with respect to the things signified outside [the mind]. For 'God is', since it too has in the mind a subject, a predicate and a copula, amounts to 'God is a being'. And this signifies much more than does 'God is God', because it signifies all beings on account of the term 'being' [occurring as its predicate]. But 'God is God' signifies nothing but God outside [the mind]. For the word 'is', insofar as it is precisely a

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[77] Augustine, *De trinitate* XV.10.19 (Text **(6)**). See also xv.12.22 and xv.27.50.

[78] I take it he means 'proposition' here, since other expressions aren't true or false.

[79] Scott ed., pp. 26–27; Scott trans., p. 73.

[80] Scott ed., p. 27; Scott trans., p. 74.

[81] Scott ed., p. 32; Scott trans., p. 79.

[82] In the sense of "God exists."

> copula,[83] signifies nothing outside [the mind] beyond the signification of the categorematic terms. Rather it signifies only the complexive[84] concept by which the intellect forms propositions from the terms 'God' and 'God'.[85]

Also, Ch. 6, sophism 3, where Buridan talks about a mental proposition as being divided into subject, copula and predicate[86]:

> But it is to be said that for a spoken proposition properly so called more is required, namely that the subject of the mental proposition be designated by one utterance and the predicate by another, and the complexive[87] concept that is the copula by a third [utterance], or at least the subject and predicate by one verb.[88]

So the claim that mental propositions are composed of mental terms is not something that was just said in passing; it seems to be pretty much a settled view.[89]

The view implies that we have not only mental categorematic terms — that is, terms that signify things — but also mental syncategoremata, the "logical particles," like 'not', 'all', 'and', 'or', 'if … then', 'necessarily', etc. A list of categorematic terms is not enough to make up a proposition.

What is the distinction between categoremata and syncategoremata? Ockham discusses this in *Summa of Logic* I.4. In terms of formal semantics, the difference can be put like this:

> If you think of the semantics of a language as being given by (a) a set of models, and (b) a set of truth conditions that allow you to as-

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[83] Mediaeval authors did not use the word 'precisely' carelessly. Here it means "insofar as it is a copula *and nothing else*" — in particular, insofar as it is *not* interpreted as having the participle 'being' implicitly built into it.

[84] The word is 'complexive', not 'complex', as Scott translates it. Buridan is not here saying that the concept is itself complex, but rather that it results in something complex. In Latin (as in English), the adjectival suffix '-ivus' (English: '-ive') is often used this way. Thus something "offensive" produces an offense; something "persuasive" produces persuasion. There are exceptions to this usage, in both Latin and English. For example, "objective" things aren't generally ones that produce objects.

[85] That is, from two occurrences of the term 'God', resulting in the proposition 'God is God'.

[86] Scott ed., p. 107; Scott trans., p. 164.

[87] Again, Scott translates this as 'complex'.

[88] I suppose Buridan is here referring to the fact that in Latin a single word like 'curro' (= I run) may be a complete proposition, the subject marker being included in the inflected verb-form.

[89] Nevertheless Ockham, in his *Commentary on the De interpretatione*, seems to have had some doubts. See Texts **(36) & (38)**. These passages are especially interesting in light of the questions raised by Gregory of Rimini and Peter of Ailly, as described below. For some further considerations of Ockham on this point, see Normore, "Ockham on Mental Language," especially pp. 63–64.

sign truth values to the propositions of the language with respect to those models,[90] then

> (i) the categorematic terms are just those the semantic role of which is given by assigning a model, and
>
> (ii) the syncategorematic words are just those the semantic role of which is given by the truth conditions.

Perhaps the claim that mental language has syncategorematic terms as well as categorematic ones can be made somewhat clearer if we observe that, while Ockham originally favored a theory that regarded a concept as a kind of intentional object of a mental act of thinking or understanding, he later came to abandon that view in favor of a theory according to which a concept just *is* a mental act of thinking. The concept of cats, in other words, is just the act of thinking about cats — nothing more.

Ockham's motivation here doesn't really matter for the present.[91] The point is that, given that he came to have this theory of concepts — that is, of the categorematic terms of mental language — it is fairly easy to see how mental syncategoremata are just other kinds of mental acts. For example, the mental conjunction "and" is just the mental act whereby the mind puts together two mental conjuncts.

But, however you work out the details, both Ockham and Buridan hold that mental propositions are composites of mental categoremata and syncategoremata.[92] That is, mental propositions really have an internal structure; they are really composed of parts.

Furthermore, it turns out that, in certain favorable cases, both Ockham and Buridan think the structure of mental propositions parallels the structure of spoken and written propositions, to such an extent in fact that the spoken or written proposition exactly reveals the structure of the mental proposition part by part.

I said this was for "favorable" cases. There are exceptions. The main ones are:

> **(a)** The proper accidents of spoken and written terms are not paralleled in mental language, as we have already seen.[93]
>
> **(b)** Figurative or metaphorical expressions or abbreviated forms of expression do not accurately mirror their mental correlates. They are for decoration or brevity, after all, not exclusively for discerning truth from falsehood.

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[90] If you don't understand this kind of lingo, just skip it.

[91] For a discussion, see Adams, *William Ockham*, Ch. 3.

[92] But see n. 89 above.

[93] See p. 109 above.

(c) Connotative terms in spoken and written language, it will turn out,[94] will not accurately reflect the structure of their mental counterparts.

(d) So called "exponible" propositions likewise will not accurately reflect the structure of the mental propositions to which they are subordinated. An exponible proposition may be regarded as the propositional analogue of a connotative term. Such exponible propositions have to be analyzed (= "expounded") into a more complicated mental equivalent.[95]

But these exceptions should not distract us from the more interesting point, that in certain favorable cases, the structure of spoken and written propositions does accurately mirror the structure of the corresponding mental propositions. For example, consider a spoken proposition without any of the above complicating factors. Take, say:

'Every man is (an) animal.'

(I put the indefinite article 'an' in parenthesis because it is not there in the Latin equivalent *'Omnis homo est animal'*. Latin has no indefinite article.)

On both Ockham's theory and Buridan's, the corresponding mental proposition is literally put together out of:

(1) A universal quantifier ("every");

(2) the concept "man";

(3) a mental copula ("is");

(4) the concept "animal."

Of course there are problems about details. We might disagree that the structure of mental language looks *that* much like English — or Latin. We might, for example, accept Ockham's criterion for what goes into mental language, but still argue about his application of that criterion.

Nevertheless, there is a more basic problem, a problem of principle. Peter of Ailly, for instance, has some arguments that mental propositions don't have parts at all. He holds that the kind of straightforward, part by part mirroring of mental language by spoken or written language, even in what we described as favorable cases, is impossible in principle. The arguments are found in the "Insolubles" part of his *Concepts and Insolubles*.

Peter of Ailly, at least in that work, was on the whole a derivative writer who took many of his views from earlier authors and combined them in ways that

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[94] We will discuss connotation-theory in Ch. 7 below.

[95] For a little more on the theory of "exposition," see Spade, "Five Logical Tracts by Richard Lavenham," pp. 83–93, and with particular reference to Ockham, see Spade, "Ockham, Adams and Connotation," pp. 608–612.

are sometimes not entirely consistent, but are very often very insightful and interesting anyway. In the present context, Peter is taking the main lines of his argument from Gregory of Rimini, sometimes borrowing whole passages virtually *verbatim*.[96] Still, Peter disagrees with Gregory on certain points.

Much of Peter's doctrine of mental language he took directly from Ockham. For a striking instance of this, see Text **(76)**, where Peter is talking about what kinds of grammatical features of spoken language are found also in mental language. After saying that mental language has names, verbs, adjectives, case, number and so on, he remarks that not all the features of spoken language are found also in mental language. But instead of going into further detail, he dismisses the topic with a curt "See Ockham on this."

1. Proper and Improper Mental Language

Nevertheless, Peter disagrees with Ockham's usual view[97] about the structure of mental propositions. In order to get into the topic, there is an important preliminary distinction that has to be made. I will follow Peter of Ailly's presentation of this distinction, although Peter is here quoting Gregory of Rimini almost *verbatim*.

The distinction is between mental language properly so called and mental language improperly so called. Peter discusses this distinction in two places in his *Concepts and Insolubles*: for mental terms he discusses it in the first (or "Concepts") part,[98] and for mental propositions he discusses it in the second (or "Insolubles") part, Ch. 2.[99]

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[96] See Peter of Ailly, *Concepts and Insolubles*, Spade trans., p. 115 n. 279 and p. 116 n. 302.

[97] I say "Ockham's usual view," because sometimes Ockham seems to suggest that mental propositions are simple mental acts, with no internal structure at all. See, for example, the discussion in Texts **(36)** & **(38)**, where Ockham gives an argument very much like one given by Gregory and Peter, described below. See also n. 89 above.

[98] Spade trans., §§ 16–20, pp. 19–21. Here is part of what he says (§§ 16–17, pp. 19–20): "Again, among mental terms one kind is a mental term *properly* so called, [and] another kind *improperly* so called. An *improperly* so called mental term is a concept of an utterance or an inscription synonymous with such an utterance. Such a concept is called a mental term "improperly" so called, because even though such a concept signifies naturally [and] properly the utterance or inscription of which it is the natural likeness, nevertheless it can together with this signify by convention and be subordinated to another concept that signifies only naturally. For example, the concept of the utterance 'man' naturally [and] properly signifies that utterance, 'man'. For it is a natural likeness of it. But it signifies by convention all individual men, and so is subordinated in signification to the concept that naturally [and] properly is representative of all men." Since there is no modern edition of Peter's Latin text, I here give you the Latin from the early printed edition in *Conceptus et insolubilia*, fol. 3ra: "Item terminorum mentalium quidam est terminus mentalis proprie dictus, alius improprie dictus. Terminus mentalis improprie dictus est conceptus vocis vel scripturae synonymae tali voci. Et dicitur talis conceptus terminus mentalis improprie dictus quia talis conceptus licet significet naturaliter proprie vocem vel scripturam cuius est naturalis similitudo potest tamen cum hoc significare ad placitum et subordinari alteri conceptui qui solum naturaliter significat. Verbi gratia, conceptus huius vocis 'homo' naturaliter proprie significat illam vocem 'homo', quia est eius naturalis similitudo. Sed ad placitum significat omnes homines singu-

Recall that mental language is supposed to be the same for all people.[100] Nevertheless, there is certainly a kind of "mental language," if you want to call it that, that goes on when we "think in English" or "think in Latin." That kind of language is silent and invisible, so it can hardly be spoken or written language; it goes on only in your mind, after all. And yet it is plainly not the same for everyone. Peter, quoting Gregory of Rimini, says[101]:

> Anyone can notice propositions like this if he keeps quiet with his mouth and speaks in his heart by forming likenesses which, if he *were* to speak with his mouth, he *would* utter outwardly.

This kind of "mental language" is the work of imagination or memory, in which we picture in the mind's eye or hear in the mind's ear the actual words of some "national language" (in Augustine's phrase[102]), which is of course conventional. This is the sort of thing I would do, for instance, if I were rehearsing a speech silently in my mind by actually going through the words one after another, even though I am not saying anything out loud.

Both Peter and Gregory explain that what we have in the mind in this case is concepts of the actual words used — spoken or written words — and not concepts of the external objects those words signify. Such concepts immediately signify the words they are concepts of, and are in fact natural signs of those words. But since signification is transitive,[103] those same concepts also signify, in a derivative and secondary way, what those spoken or written words they are concepts of signify. Now those spoken or written words signify by convention. Hence, in such a case the concepts also, in a derivative and secondary way, signify by convention what the words they naturally signify signify by convention.

This is what Peter and Gregory call "mental language improperly so called." Mental language "properly so called" is not like this kind of silent recitation. Mental language properly so called *is* the same for all people, is not conventional in any sense, and is not tied to one of the so called "national languages."

Why should anyone believe there is such a thing as mental language properly so called? Well, I suppose, one argument would be that, if there were not, it would be impossible to translate reliably from one conventional language to another. But perhaps it is best not to push this argument, since it was not long ago that some philosophers were willing to say exactly that. In fact, they were not only willing, they were positively enthusiastic about it.[104]

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lares. Et sic subordinatur in significatione illi conceptui qui naturaliter proprie est repraesentativus omnium hominum."

[99] Spade trans., §§ 94–96, pp. 36–37. I have retranslated §§ 94–95 in Text **(77)**.

[100] See p. 95 above.

[101] From Text **(77)**. For Gregory, see his *Super primum et secundum Sententiarum* I, prol., q. 1, a. 3, fol. 4F–G, (= Trapp ed., vol. 1, pp. 30–31).

[102] See Text **(6)**.

[103] See Ch. 3, pp. 84–86, above.

[104] I am thinking of Quine's famous theory of the "indeterminacy of translation." See, for example, his *Word and Object*, especially Ch. 2.

So here is another reason. According to the theory, the propositions of mental language are judgments.[105] But sometimes we make judgments "in a flash," as it were — virtually instantaneously, and without running through any words of conventional language, even silently in our minds. Perhaps the most striking examples of this occur when one is doing logic or mathematics. There it sometimes happens that, after puzzling over some question for a long time, you all of a sudden just "see" how it goes, how to prove the theorem, how things are connected. This insight is not yet put into words, not even silent words. (In fact, sometimes there is a sense of urgency about getting it into words, getting it "down on paper," before the insight is lost.[106]) But there is very definitely an affirmative judgment there. In fact, if the "insight" if particularly strong, if the "light of truth" is particularly bright on a given occasion, the affirmation is virtually automatic and involuntary; you cannot help but assent.

Thus, such judgments — not formed in terms of any conventional language — do occur. And that is exactly what Peter and Gregory mean by mental propositions properly so called. It may well be that not all such proper mental propositions occur in special moments of "insight." But at any rate they do occur there, and that is enough to make the case that there is such a thing as mental language properly so called.

As I have said, Peter took the distinction between proper and improper mental language almost *verbatim* from Gregory of Rimini. But Gregory did not make the doctrine up himself. He refers, for example, to Augustine's *De trinitate* Text **(6)**[107]:

> Thus whoever is able to understand the word, not only before it sounds *but also before the images of its sounds are pondered in thought* — for this is what pertains to no language (namely, one of those that are called national languages, of which ours is Latin) …

When Augustine says "but also before the images of its sound are pondered in thought," he is talking about mental language improperly so called, and is saying that what he wants to focus on here happens even before that.

Gregory also refers[108] to a passage in Anselm's *Monologion*, Ch. 10, where Anselm gives us a fully detailed and completely clear account of the difference[109]:

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[105] Actually, that is too simple. It is possible to entertain mental propositions without forming any judgment one way or the other about them. But in any case it is true according to the theory, even when formulated with full rigor, that judgments always require some kind of mental proposition. And that is all that is really needed for the following argument.

[106] It is an embarrassing fact, of course, that all too often, once one does get it "into words," it turns out that the insight was wrong — things don't go together that way after all. But this doesn't detract from the present point.

[107] See Gregory, *Super primum et secundum Sententiarum* I, prol., q. 1, a. 3, fol. 4F–G (= Trapp ed., vol. 1, pp. 30–31). Peter does not quote this part of Gregory's text.

[108] *Ibid*. Peter doesn't quote this reference either.

[109] In Anselm, *Opera omnia*, Schmitt ed., vol. 1, p. 24.29–25.15.

> For by frequent usage it is known that we can "speak" of one thing in three ways. For we either **(a)** speak of it by sensible signs — that is, [signs] that can be sensed with the bodily senses, by sensibly using [them]. Or **(b)** by insensibly thinking within ourselves of the same signs that are outwardly sensible. Or **(c)** by using these signs neither sensibly nor insensibly, but rather by "saying" the things themselves inwardly in our mind, either by the imagining of bodies or by the understanding of reason on behalf of the diversity of the things themselves.[110] For I say *man* in one way when I signify him by the name 'man'. In another way, I think of the same name silently. In [yet] another way, when the mind considers him, the man himself, either through an image of [his] body or by reason: through an image of [his] body, as when it imagines his sensible shape; but by reason, as when it thinks of his universal essence, which is "mortal rational animal."

Anselm goes on to give some examples. He appears to think that mental language "properly so called" (as it would later be called) can proceed either by means of concepts or by means of mental imagery. Peter of Ailly and Gregory of Rimini won't allow the latter alternative (the terms of proper mental language are concepts, not images in imagination or memory), but they all agree on the main point: mental language properly so called does not in any way use "sensible signs" — spoken or written words.

Mental propositions *improperly* so called are plainly composed of parts. Their structure is exactly the structure of the corresponding spoken or written proposition, conventional features and all. When I rehearse a speech silently, I run through, part by part and in succession, every word I will ultimately utter aloud before an audience.

But that is not what Gregory and Peter of Ailly are talking about when they ask whether mental propositions are made up of parts. They are worried about the structure of mental propositions *properly* so called.

Although Ockham and Buridan don't explicitly draw the distinction between proper and improper mental language, it is clear that Ockham, at any rate, is talking about mental propositions properly so called when he says they are composed of parts. In fact, in *Summa of Logic* I.1, § 6, which is one of the places where Ockham makes that claim — he refers to the text of Augustine's *De trinitate* (Text **(6)**), and paraphrases the remark about belonging to no "national language."

So the question Gregory and Peter are asking is this[111]:

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[110] That last clause is obscure, I admit.

[111] Peter of Ailly, *Conceptus et insolubilia*, fol. 8ra; Spade trans., § 99, pp. 37–38. The Latin is: "… utrum illa propositio mentalis sit essentialiter composita ex pluribus notitiis partialibus quarum una sit subjectum alia vero praedicatum et alia copula. Videtur enim communiter omnibus quod sic." For Gregory, see his *Super primum et secundum Sententiarum* I, prol., q. 1, a. 3 (= Trapp ed., vol. 1, p. 33).

> … whether the mental proposition [properly so called] is essentially composed of several partial acts of knowing, of which one is the subject, another the predicate and [yet] another the copula. For it seems to everyone in general that it is so.

It seemed so to Ockham and Buridan, for instance.[112] But both Gregory and Peter answer the question in the negative. Their discussion is very rich, and there are several lines of argument in it. I want to focus on just two of them.

The second is confined to a single paragraph in Peter's text, which I will discuss later. But the first one is diffused over several paragraphs in his "Insolubles," where Peter is, as he often does, quoting Gregory virtually *verbatim*.[113]

The first line of argument (Text **(78)**) in effect asks: What is the difference between the two mental propositions properly so called that correspond to the two spoken or written propositions:

'Every whiteness is a quality' (which is true)

and

'Every quality is a whiteness' (which is false).

Ockham (and, I suppose, Buridan) would agree that, if we disregard the so called proper accidents of the words (for example, the fact that both 'quality' and 'whiteness' are third-declension nouns in Latin), these two spoken or written propositions do not have any of the exceptional features I mentioned earlier as blocking spoken or written language from mirroring the structure of mental language exactly.[114] That is, neither proposition makes use of metaphor or figurative language, neither one contains any connotative term,[115] and neither proposition is exponible.[116] Therefore, the structures of the mental propositions expressed by these two spoken or written propositions should correspond part by part with the structures of the spoken or written propositions themselves.

Notice also that these two spoken or written propositions are going to have to correspond to distinct mental propositions. If they did not, they would correspond to the same mental proposition, and so would be synonymous spoken or written propositions. But they can't be synonymous, since the first one is true whereas the second one is false.

Now the only structural difference between the two physical propositions (that is, the spoken or written propositions) is one of word-order. So the question what the difference is between the two corresponding mental propositions comes down to: *What corresponds to word-order in mental language properly so called?*

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[112] Always with the proviso about Ockham's suggestion in Texts **(36)** & **(38)**.

[113] Parts of the discussion are translated in Texts **(78)** & **(79)**.

[114] See p. 116 above.

[115] We'll talk about that in Ch. 7.

[116] On "exponible" propositions, see p. 117 and n. 95 above.

2. The Problem of Word-Order in Proper Mental Language

In written language, of course, word-order is effected by the spatial configurations of the words. But the mind is supposed to be a spiritual medium, so that such spatial distinctions are inapplicable there.

Well, you might say, that's not so bad. Spatial distinctions are also inapplicable to spoken language. There the distinctions of word-order are made out by the temporal ordering of the sounds. And at first it looks as if that is going to be the case in mental language too (Text **(79)**):

> But perhaps it would be said to these [arguments] that although the parts are alike in such propositions, and in the same first subject,[117] yet different propositions result on account of the different order of their production … Similarly, the part of the proposition produced earlier is the subject, but the part produced later is the predicate.

Note that it is not really necessary to say, as Peter does in this passage, that the *first* part is the subject and the *second* part the predicate — any more than that is necessary in spoken Latin syntax, where sometimes the subject is deferred to later in the sentence. Still, what *is* necessary is the general claim that word-order is accomplished by the order of production in time.

Both Gregory and Peter reject this possibility for mental language properly so called. I want to focus on one line of reasoning they give. Here is what Peter says[118]:

> For first, it would be quite amazing if the intellect could not produce a whole proposition simultaneously, since [that] is its perfection.

What is the point here? Well, recall what mental language properly so called is. It's the sort of thing that goes on, for example, when we have a "flash of insight" in doing a proof in mathematics or logic. That kind of insight occurs suddenly, all at once. Although it happens *in* time, it doesn't *take time*.[119] Hence there can be no temporal order of production there.

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[117] That is, they are accidents in the same mind. It doesn't do any good if I am thinking of the subject but you are thinking of the predicate.

[118] Peter of Ailly, *Conceptus et insolubilia*, fol. 8va; Spade trans., §108, p. 39. The paragraph gives one reason why the suggestion in Text **(79)** must be rejected. The Latin is: "Primo enim valde mirum esset quod intellectus simul unam totam propositionem producere non posset, cum sit sua perfectio." Gregory of Rimini makes effectively the same point, although he doesn't say anything about this's being the intellect's "perfection." See his *Super primum et secundum Sententiarum* I, prol., q. 1, a. 3, fol. 4N (= Trapp ed., vol. 1, p. 34).

[119] Or at least it seems that way. Nevertheless, a surprising number of people I've talked to about this want to resist the idea that these occurrences are instantaneous. No, they say, they do take time, and there is indeed a temporal sequence involved; it just happens "very fast" — too fast

Even if mental language properly so called isn't always a matter of these "flashes of insight,"[120] still sometimes it is. And that is enough to give us the problem of mental word-order.

Here is another argument, although neither Peter nor Gregory, nor anyone else that I know of actually states it. Mental language properly so called had better be able to occur all at once without any temporal succession — because, if it didn't, then *what language would God think in*? God is supposed to have thoughts and knowledge too, so that the notion of mental language properly so called applies as much to him as it does to us.[121]

Now if God is atemporal, completely outside time, then of course his mental language properly so called cannot proceed in temporal fashion. But even if God is in time, as Ockham and others thought,[122] he could not form his mental propositions in this sequential, part by part fashion without changing over time, so that first he would form one part of the mental proposition, and then do something different to form the next part. But even Ockham, who thought God is a temporal being and in time as much as we are, did not think that God changed over time.[123]

So mental language properly so called has got to be able to take place instantaneously. That is, as Peter oddly puts it, its "perfection." And if that is so, then mental language properly so called is not going to be able to accomplish word-order in general by means of the temporal order of production. The kind of sequential, part by part production mentioned in Text **(79)** is more characteristic of mental language improperly so called. But that is not what we're talking about here.

In short, word order in mental language properly so called is not going to be accomplished by either the spatial or the temporal configuration of the words. It begins to look as if there is no way at all to make a distinction of word-order in mental language properly so called.

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for us to be aware of it. But why believe that, when reflection seems to testify to the opposite? I am very suspicious of moves that make things happen too fast for us to notice, when the sole purpose of such moves seems to be to make the claims they are defending immune from empirical testing.

[120] And it isn't. Insights are relatively rare, but mental language properly so called is supposed to be involved anytime we think.

[121] Ockham does explicitly say that *angels* communicate via mental language. In fact, he devotes a whole question to the topic angelic communication. See his *Quodlibet* 1, q. 6. Note that if angels communicate via mental language properly so called, then it seems they cannot lie to one another. For lying requires saying one thing while thinking another. But here the saying and the thinking are the same.

[122] In fact this view was more or less standard by Ockham's day. See Normore, "Future Contingents," p. 367.

[123] Modern readers sometimes find this kind of appeal to theological considerations distasteful. To begin with, even if they believe in God, they probably do not have the same concept of God as Ockham, Gregory, Peter and the others did. And even if they do, they often feel it is inappropriate to try to prove philosophical points this way. But think of it like this: Do you want to say that such a concept of God is philosophically *impossible*, and moreover that it is philosophically impossible *because of the nature of mental language properly so called*? That would be a very strong philosophical claim!

Thus — and this is the moral of the story — Gregory's and Peter's argument amounts to a kind of *reductio*. If Ockham's usual view is correct, and the mental propositions corresponding to the spoken or written propositions 'Every whiteness is a quality' and 'Every quality is a whiteness' really are composed of parts corresponding one for one to the parts of the spoken or written propositions, then there is going to be no way to distinguish those two mental propositions from one another. The two will have exactly the same parts, the same ingredients. And the "arrangement" of those ingredients is simply not an applicable notion here.

Therefore, those two spoken or written propositions must be subordinated to the same mental proposition — or at best to mental propositions that are only numerically distinct (which doesn't make any difference that matters for us). Therefore, those two spoken or written propositions would have to be synonymous. But they obviously aren't! And just to drive the point home, they surely aren't synonymous, since the one is true and the other is false!

Therefore, the hypothesis that got us into this mess in the first place must be rejected. In short, the mental propositions to which the two spoken or written propositions are subordinated are not composed of parts at all in the way Ockham thinks. *Q. E. D.*[124]

a. Gregory of Rimini's and Peter of Ailly's Theory of Mental Propositions as Structureless Acts

For Gregory and Peter, mental propositions properly so called are structureless mental acts. They cannot be further analyzed into component parts. For Peter, although not for Gregory, these structureless mental acts will nevertheless bear certain kinds of "equivalence" relations to other mental acts — to concepts in particular. But those concepts do not really enter into the make-up of the propositional act as real parts of it.

Peter discusses all this in the "Insolubles" part of his *Concepts and Insolubles*, in a series of "conclusions."[125] Here is some of the discussion[126]:

> From what has been said above, a third conclusion is plain and is inferred, that an affirmation or negation in the intellect (or any mental expression you want), ought not to be called "complex" because of its being essentially composed of several partial acts of knowing.

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[124] Although Ockham's usual view is that mental propositions are composed of parts, recall that in Texts **(36)** & **(38)** he takes the opposite view and in fact presents an argument very much like the one we have just gone through.

[125] Peter of Ailly, *Conceptus et insolubilia*, fol. 9$^{rb–vb}$; Spade trans., §§ 125–137 (pp. 42–44).

[126] Peter of Ailly, *Conceptus et insolubilia*, fol. 9^{rb}; Spade trans., § 125, p. 42. The Latin is: "Ex praedictis patet et infertur tertia conclusio, quod affirmatio vel negatio in intellectu seu quaevis mentalis oratio non debet dici complexa propter hoc quod sit composita ex pluribus notitiis partialibus essentialiter."

We have just seen the reasoning behind that conclusion. Peter goes on[127]:

> The fourth conclusion [is that] a mental expression ought not to be called "complex" because in signifying it is equivalent to several utterances or inscriptions that are the components of a spoken or written expression in the way recounted above. [This is] proved, because if [it were] so, it follows that no mental expression would be complex naturally but by convention only. For any such [mental expression] is signified by an utterance or inscription [that is] composite or complex in the way stated above. But it could [in addition] be signified conventionally by an incomplex utterance, just as it is signified by a complex [utterance]. And so it could be simultaneously complex and incomplex. All these things seem unreasonable.

On the theory being rejected here, a mental expression properly so called would be "complex" only by a kind of analogy with the spoken or written expressions that are subordinated to it. This was Gregory of Rimini's view,[128] and Peter rejects it. He argues in the passage just quoted that this would make the complexity or non-complexity of a mental expression depend on the conventions of spoken and written language. Furthermore, since the conventions of spoken and written language are completely arbitrary, it might happen that a complex spoken expression and a one-word spoken expression are subordinated to the same mental act, and in that case this theory would imply that that mental act was both simple and complex at the same time. And while there is not anything actually inconsistent about all this if we are clear about what we mean by it, Peter thinks it is an unreasonable way to talk. He gives us his own view in the following passage[129]:

> The sixth conclusion [is that] an affirmation or negation in the intellect ought to be called a "complex" act of knowing because in signifying it is equivalent to several acts of knowing [that are] specifically distinct.

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[127] Peter of Ailly, *Conceptus et insolubilia*, fol. 9$^{rb–va}$; Spade trans., §§ 129–130, p. 43. The Latin is: "Quarta conclusio: oratio mentalis non debet dici complexa quia aequivalet in signficando pluribus vocibus vel scriptis orationem vocalem vel scriptam praedicto modo componentibus. Probatur, quia si sic, sequitur quod nulla oratio mentalis esset naturaliter complexa sed solum ad placitum. <Quia quaelibet talis ad placitum> significatur per vocem vel scripturam modo praedicto compositam vel complexam. Sed posset significari ad placitum per vocem incomplexam sicut significatur per complexam. Et sic posset simul esse complexa et incomplexa. Quae omnia videntur irrationabilia." For the words in pointed brackets, see Spade trans., p. 121 n. 369.

[128] Gregory, *Super primum et secundum Sententiarum* I, prol., q. 1, a. 3, fol. 4O (that's 4 + letter 'O', not "forty") (= Trapp ed., vol. 1, p. 35).

[129] Peter of Ailly, *Conceptus et insolubilia*, fol. 9$^{va–b}$; Spade trans., § 135, p. 44. The Latin is: "Sexta conclusio: affirmatio vel negatio in intellectu debet dici notitia complexa quia pluribus notitiis specifice distinctis aequivalet in significando.

This avoids the problem with Gregory's theory, which would make complexity or the lack of it purely a matter of convention. Still, it is not altogether clear just what kind of "equivalence" Peter has in mind. At any rate it *is* clear that he (and for that matter Gregory of Rimini too) think mental propositions properly so called are not really complexes at all; they are simple, unanalyzable mental acts.[130]

b. God is a True Mental Proposition Properly So Called

A little while back,[131] I mentioned the notion of God's mental language. Now although no one I know of actually used the notion of God's mental language to argue that mental propositions properly so called have to be able to occur instantaneously, Peter does in fact say something astonishing about mental language in connection with God. He's rather hesitant about it, and doesn't want to commit himself to it too firmly, but here is what he says[132]:

> The third conclusion,[133] which I posit as probable [only] and do not [definitely] assert, for the sake of understanding what has gone before, [is] namely that God (or the divine act of knowing) is a true proposition for the divine intellect.

The proof is given in the paragraphs following.[134] The basic idea is this: God has knowledge, and that knowledge (like ours) is framed in terms of mental language properly so called. But God is metaphysically simple; he has no component parts and no accidental properties.[135] It follows, therefore, **(1)** that God and his knowledge are *identical*. There is no metaphysical distinction to be made there for him, as there is for us. And **(2)** it follows further that there is no metaphysical distinction to be made between God and his mental propositions properly so called. In fact, we shouldn't really even speak in the plural here. It is not as if God has (or is) several metaphysically distinct mental propositions (as though one thing were many). In God, it's all the same. His one mental proposition properly

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[130] The theory Ockham presents in Text **(38)** is ambiguous. It may be Gregory of Rimini's theory, or it may be Peter's. Or it may be something in between.

[131] See p. 124 above.

[132] Peter of Ailly, *Conceptus et insolubilia*, fol. 14^{rb}; Spade trans., § 226, p. 61. The Latin is: "Tertia conclusio quam pono probabiliter et <non> assertive est pro intellectu praecedentis, scilicet quod deus seu divina notitia est ipsi intellectui divino propositio vera." For the word in pointed brackets, see Spade trans., p. 135 n. 609.

[133] This "third conclusion" belong to a different series from the "third conclusion" quoted on p. 125 above.

[134] Peter of Ailly, *Conceptus et insolubilia*, fol. 14$^{rb–va}$; Spade trans., pp. 61–62.

[135] There is nothing surprising about this claim. It was a standard view. I don't want to go into the details here, but it is based on two things: **(a)** the claim that God is a creator, and therefore uncaused; and **(b)** the view that any kind of real composition requires an efficient cause to put the components together.

so called does all the work that we accomplish with many such mental propositions. And that's why God is a true proposition![136]

c. The Difference Between Gregory's Theory and Peter's

Gregory thinks the conclusion that mental propositions have no parts holds for all mental propositions properly so called. Peter doesn't think so. He agrees with Gregory about mental categoricals[137]:

> The second conclusion[138] [is that] no categorical mental proposition is essentially composed of several partial acts of knowing, of which one is the subject, another the predicate and [yet] another the copula.

But curiously, he disagrees in the case of mental hypotheticals[139]:

> The first of these [conclusions] is [that] every mental hypothetical proposition is essentially composed of several partial acts of knowing.

For example, Peter thinks a mental syllogism is a single mental conditional proposition composed of two premises (as antecedent) and a conclusion (as consequent) that are really distinct, since it is possible to doubt the former and not the latter (or vice versa) at the same time[140]:

> Third, any [mental] syllogism (indeed, any mental consequence you want) is a hypothetical proposition. And it is certain that any such a syllogism is composed of premises and a conclusion that are distinct parts. For one can assent to the one and not the other, as is

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[136] This striking claim is not original with Peter of Ailly. See Peter of Ailly, *Concepts and Insolubles*, Spade trans., pp. 135–137 n. 614.

[137] Peter of Ailly, *Conceptus et insolubilia*, fol. 8^{vb}–9ra; Spade trans., §119, p. 41. The Latin is: "Secunda conclusio: Nulla propositio mentalis categorica est essentialiter composita ex pluribus partialibus notitiis quarum una sit subjectum et alia praedicatum et alia copula."

[138] You might as well give up any idea of trying to keep track of Peter's several series of "conclusions."

[139] Peter of Ailly, *Conceptus et insolubilia*, fol. 8^{vb}; Spade trans., § 113, p. 40. The Latin is: "Omnis propositio mentalis hypothetica est ex pluribus notitiis partialibus essentialiter composita." The word 'hypothetical' in mediaeval logic refers to any proposition put together out of two or more simpler propositions. 'Hypothetical' does not necessarily mean "conditional," and it does not exactly mean what we mean by "molecular" either — since the negations of atomic propositions are "molecular" in our sense but not "hypothetical" in theirs.

[140] Peter of Ailly, *Conceptus et insolubilia*, fol. 8^{vb}; Spade trans., § 117, p. 41. The Latin is: "Tertio, quilibet syllogismus — immo quaelibet consequentia mentalis — est propositio hypothetica. Et constat quod quilibet talis syllogismus componitur ex praemissis et conclusione quae sunt partes distinctae, quia stat assentire uni et non alteri, ut clarum est. Igitur."

> plain. Therefore, [there are some mental hypotheticals composite in the way described above].

The basic idea here seems to be that I cannot both assent to and yet not assent to the same proposition at the same time. Thus, since I can assent to one premise, say, of a syllogism and yet doubt the other, or assent to the conclusion and yet doubt one or both of the premises, it follows that the two premises and the conclusion cannot be really the same proposition in the mind, but must be all really distinct from one another. Thus, mental syllogisms must be really composed of parts.

But that's a terrible argument. The fact that you can assent to the conclusion, say, of a syllogism without assenting to its premises no more shows that the syllogism really is metaphysically made up of those propositions as parts than the fact that I can produce distinct concepts separately shows that they really enter into mental propositions as parts.

What is to prevent the mental syllogism from being a single, metaphysically simple mental act that is "equivalent in signifying" to several propositions, even though those propositions do not really enter into its metaphysical makeup, just as a mental proposition properly so called is "equivalent in signifying" to several concepts, even though those concepts do not really enter into the metaphysical makeup of the proposition? Whatever Peter means by "equivalence in signifying" in the latter context, why should it not be applicable also in the former?

But worse, Peter apparently fails to see that the considerations of word-order apply to syllogisms just as much as they do to categorical propositions. What is the difference between the valid syllogism:

> Every man is an animal.
> Socrates is a man.
> Therefore, Socrates is an animal.

and the invalid one:

> Socrates is an animal.
> Socrates is a man.
> Therefore, every man is an animal.

except the order and arrangement of the various propositions with respect to the word 'therefore'?

In fact, any kind of "hypothetical" connective[141] that is not commutative (that is, any one for which the order does count) is going to be subject to Peter's own word-order argument.

Well, what about that word-order argument? I think it is a good and telling argument, but not good enough to establish the conclusion Gregory and Peter try

[141] See n. 139 above.

to get from it. That is, I think the argument is probably enough to support the claim that there is no word order in mental language. But it is not enough to show that mental propositions have no parts. For there is a way to avoid the latter conclusion.

d. A Way Out of the Word-Order Argument

What I have in mind is suggested (no more than that) in a curious text by an anonymous author writing no earlier than the third quarter of the fourteenth century (and probably later than that). This anonymous author wrote a very interesting *Commentarium in insolubilia Hollandrini* — that is, a commentary on the *Insolubilia* of John of Holland. John of Holland was active in the 1360s at the University of Prague. You don't have to know anything more about him than that.[142] The anonymous commentary is interesting for lots of reasons. But it has never been edited, or even studied very fully.[143]

One question raised by the anonymous author is this[144]: "Whether a part of an insoluble [proposition][145] is insoluble, and likewise whether a part of a proposition is true?" Ignore the business about insolubles for now. But notice the second part of the author's question: "Whether a part of a proposition is true?" And I suspect our anonymous author is talking about mental propositions here, although that cannot be verified without further investigation.

The author is thinking mainly of categorical propositions. He is asking whether, for example, the proposition 'John ate' is a constituent of the proposition 'John ate the apple', a constituent with its own truth value, so that if John really did eat the apple, then anyone uttering the proposition 'John ate the apple' would be stating *two* truths, not just one: **(1)** that John ate, and **(2)** that John at the apple. But in addition to categorical propositions, the question can also be asked for hypothetical (mental) propositions, which are made up — or at least seem to be made up — of other propositions as parts. If they really are so made up, as Peter of Ailly holds but Gregory of Rimini does not, then it would appear that the answer to the second half of the question has to be "yes" for hypothetical (mental) propositions — they really do have other propositions as constituents, and those constituent propositions presumably bear truth values like any other proposition. But if they are *not* really so made up, as Gregory of Rimini holds but Peter of Ailly does not, then the answer would appear to be "no" for (mental) hypotheticals.

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[142] But if you are curious about his *Insolubilia*, which was moderately well known, see Bos' edition in John of Holland, *Four Tracts on Logic*.

[143] As far as I know, the sum total of what we know about this text is reported in Spade, *The Mediaeval Liar*, item V (pp. 23–26), and in what you will read below.

[144] Translated from Vienna, Nationalbibliothek, Pal. Lat. MS 4853, fol. 102^{v}. The Latin is: "Utrum pars insolubilis sit insolubilis, et similiter utrum pars propositionis sit vera?"

[145] An "insoluble" is an antinomial proposition like the Liar Paradox. John of Holland's theory of insolubles is a variant of William Heytesbury's theory. See p. 93 above.

In connection with this question, our anonymous author refers to the view of certain unidentified people who appear to hold that (mental) propositions — both categorical and hypothetical — really are composed of parts. He says[146]:

> Adversaries who want to run away [from the problem] say here that no part of a categorical proposition is a proposition. And they say that for something to be a proposition it is required that there be a subject, a predicate and a copula in it, either expressly or equivalently.[147] They say further that for something to be a subject there is required a syncategorema predenoting[148] that it is the subject. The same holds for the copula and the predicate of the categorical. Just as, in order for something to be taken disjunctively a syncategorema is required by means of which it is so taken, so in order for some term to be taken as the subject, there is required a syncategorema by means of which it is taken as the subject. So too for the predicate.

There are many things to question here. Not the least of them is: How does the theory in the rest of the paragraph bear on the claim referred to in the first sentence? But I am not primarily concerned right now with understanding our anonymous author's text. I only want to say that it suggests a way to allow for real complexity in mental propositions properly so called.[149] So, fair warning: I'm really free-wheeling now. Here we go:

Look at the last sentence of the quotation. The first part of it talks about disjunction, and says in effect that in order to have a disjunction you need a mark of disjunction, a "disjunction sign." In English it's 'or', in Latin it's *'vel'* or *'aut'* or *'sive'*. In modern logical notation it's the "wedge" ('$\vee$'), at least for inclusive disjunction.

When our author talks about something's being "taken disjunctively," he could mean one of two things. He might mean taking it as a "disjunction," in

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[146] *MS cit*., fol. 103^{r}. The Latin is: "Adversarii volentes fugere dicunt hic sic, quod nulla pars propositionis categoricae sit propositio. Et dicunt quod ad hoc quod aliquid sit propositio requiritur quod in ipso expresse vel aequivalenter sit subjectum, praedicatum et copula. Dicunt ulterius quod ad hoc quod aliquid sit subjectum requiritur unum <syn>categorema praedenotans ipsum esse subjectum. Conformiter de copula et praedicato categoricae. [There follows an illegible abbreviation.] Sicut ad hoc quod aliquid accipiatur disjunctive requiritur unum syncategorema mediante quo sic accipiatur, sic ad hoc quod aliquis terminus capiatur pro subjecto, requiritur syncategorema mediante quo capiatur pro subjecto. Et sic de praedicato."

[147] The phrase 'or equivalently' is reminiscent of Gregory's and Peter's view that, although categorical mental propositions do not really have parts, nevertheless they are "equivalent in signifying" to complex expressions — spoken ones for Gregory, mental ones for Peter. This *may* be what our anonymous has in mind, but I doubt it. More likely he is thinking of how the one-word Latin sentence *'Curro'* (= 'I run), for instance, is "equivalent" in a fairly obvious and strong sense to *'Ego sum currens'* (= 'I am running'), with the subject expressed explicitly and the verb expanded to a copula and a participle.

[148] I have no idea what "predenotation" is. But that's what the manuscript has.

[149] I emphatically *not* claiming that this is what the anonymous author himself had in mind. In fact, I am pretty confident that it isn't.

which case it will have to have some mark of disjunction *in* it. Thus *'$p \vee q$'* has '$\vee$' in it. But he might also mean taking it as a "disjunct" in a disjunction, in which case it will have to have some mark of disjunction operating *on* it. (That is, it is "within the scope" of a disjunctive operator, as they say.) Thus, *'p'* in *'$p \vee q$'* has '$\vee$' operating on it. So far so good. We haven't seen anything surprising yet.

Of course sometimes in ordinary language, although not usually in formal logic, we disjoin not propositions but terms.[150] We sometimes say not 'John is singing or Mary is singing' but instead 'John or Mary is singing'.[151] The same thing we said about propositional disjunction applies also to term-disjunction: there must be some mark of disjunction there.

Now Latin, although not English, allows two ways to form term-disjunctions. You can either take the same words we use to disjoin propositions, only put them between terms instead (that's the way we do it in English), or — and now things begin to get interesting — you can add the special suffix *'-ve'* to the second term-disjunct.[152] Thus 'John or Mary is singing' could be translated either as *'Johannes vel Maria canit'* or as *'Johannes Mariave canit'*.[153] The *'-ve'* construction is not very common, particularly in late mediaeval Latin, but it was there and available for those who cared to use it.

Now what's the point of all this? Well, in the case of term-disjunction using *'-ve'*, we are in effect marking for disjunction not by reserving a special word for that purpose, but by what amounts to inflection. Just as grammatical case in Latin is marked by inflection, so that the genitive case-ending, for example, tells us about the syntactical function of the word, so too here we have the disjunctive suffix *'-ve'* telling us about another syntactical function of the word.

In English the difference between 'The dog chased the cat' and 'The cat chased the dog' is purely one of word-order. In Latin, word-order doesn't matter in this case. Even though by the later Middle Ages it was customary to put the subject before the predicate, in fact the Latin sentence would be perfectly intelligible no matter what order the words came in. This is because the different syntactical functions of the terms 'dog' and 'cat' are marked in Latin by inflection, by case-ending.

Perhaps you can see where this is headed. It suggests the following theory of mental language: Mental propositions, let us say, categorical as well as hypo-

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[150] In fact, we will see in Ch. 9, below, that an important part of "supposition-theory" uses term-disjunction, namely the theory of "merely confused supposition." And we will have occasion later to use term-*conjunction* too.

[151] There the two are equivalent, of course. But that isn't always so. 'Every human being is male or female' is by no means equivalent to 'Every human being is male or every human being is female', and 'I promise to give you either this horse or that horse' is not equivalent to 'I promise to give you this horse or I promise to give you that horse'. The theory of "merely confused supposition" was designed to handle such cases. (Horse-promising, it turns out, was a big topic in late mediaeval logic. See Ch. 9, pp. 286–288, below.)

[152] *'-ve'* is obviously etymologically connected to *'vel'*.

[153] For that matter, look at Boethius' famous definition of a proposition, in Boethius, *De differentiis topicis*, col. 1174B (see Stump trans., p. 30): "A proposition is an expression signifying the true or the false." The Latin is: "Propositio est oratio verum falsumve significans." There you see the disjunctive suffix *'-ve'* in action.

thetical ones, do indeed have parts. Thus — taking categorical propositions, for example — there is going to have to be something about the subject term that makes it the subject and not the predicate, and likewise something about the predicate term that makes it the predicate and not the subject. This is true of spoken or written language just as much as it is for mental language.

In spoken or written language it may be word-order that does it. But, as we have just seen, it doesn't have to be. It might be grammatical inflection — something like case-ending — that marks the word as playing the role of subject, whereas a different inflection marks a word as playing the role of predicate.

Note that the distinction between nominative and accusative is not enough make this difference, since the nominative is sometimes used for predicate terms too (we speak of "predicate nominatives" in that case). This is exactly what happens in our earlier example of 'Every whiteness is a quality' and 'Every quality is a whiteness',[154] and it is just this fact that originally gave rise to the question what plays the role of word-order in mental language properly so called. Since Gregory and Peter have argued that the notion of word-order itself doesn't make much sense for mental language, why not suppose that mental language has some special kind of inflection that marks predicate terms, whether they are in the accusative case or the nominative?

There is nothing contrary to the spirit of mental language here. Ockham, for example, is already committed to case, number, and comparison for mental names, and to mood, voice, person, number and tense for mental verbs.[155] Thus, a concept of "lion" in the nominative case is not the same as the concept of "lion" in the accusative case, even though both are concepts *of* exactly the same things.

Why not push this to an extreme, and make mental language such a highly inflected language that *word order counts for nothing at all*? Instead of determining the grammatical role of a mental term by looking at its position in the proposition (in other words, by word-order), you would just look at the term itself, which would bear its grammatical function on the face of it. And why not make this true not just for the individual words in mental categorical propositions but also for the propositional components of mental hypotheticals — so that a disjunct, for example, would be marked by a special disjunctive inflection applied to all the mental words in that disjunct?

There are many ways to work this out. In typical spoken and written languages, we think of inflection as being done by word-endings. But it could have been otherwise. In written language, inflection could be a matter of using different colored inks. In spoken language, we could use tones (as in Chinese[156]) to mark syntactical function. In mental language, perhaps it's a matter of a certain kind of mental "charge" that marks subject concepts, a different kind of mental "charge" that marks predicate concepts, yet a different kind of "charge" to mark the ingredients of a disjunction, and so on.

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[154] See p. 122 above.

[155] See pp. 107–109 above.

[156] I don't mean that Chinese uses tones *this* way, but rather that the kinds of tones Chinese uses could be used in a syntactical role rather than a lexical one.

The details are not important, but the general point is: It is possible to make the necessary distinctions of syntactical role by devices that are more analogous to inflection than they are to word order. But if that is so, then it is possible for mental propositions to have real parts after all. The question of word order need not arise.

On the view I am spinning out here,[157] mental propositions would have parts after all, and the propositions themselves would just be a simple "binding together" of those parts — in no particular order.

Thus it is possible to answer Gregory's and Peter's argument, and to allow real complexity into mental language. But note that in the process, we've made mental language much more complex than Ockham thought it was. The straightforward kind of correspondence he had in mind between spoken and mental language (at least in favorable cases) won't work. The subject of the mental proposition corresponding to 'Every whiteness is a quality' and the predicate of the mental proposition corresponding to 'Every quality is a whiteness' will, on this new theory, be more than numerically distinct. They will be as distinct as 'she' is from 'her' and 'hers', and as 'he' is from 'his' and 'him'.

So while Gregory's and Peter's argument does not establish their own view that mental propositions have no parts, it does tell against the rather simple "part"-theory that seems to have been Ockham's usual view.

3. The Problem of the Unity of Proper Mental Propositions

All that is the first of the two lines of argument I said I wanted to extract from Peter of Ailly's discussion.[158] The second line of argument can be handled much more quickly.

Suppose we adopt the "inflection" theory just described. On that theory, mental propositions — and in general, all complex mental expressions — are just a bunch of mental acts bound together in any old order, or rather in no order at all. (A complex mental expression would then be more like an unordered set than like an ordered sequence.)

In that case, here is a question: What exactly is this "binding together" of the parts? Just how are the parts of mental proposition put together? Peter says[159]:

> Second, it does not appear that [there is] any possible way for such a composition [to take place]. For if someone affirming or denying

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[157] Understand that I am not recommending this theory. I'm only trying to find a way around Gregory's and Peter's view that because the notion of word-order makes little sense in mental language properly so called, therefore mental propositions can have no parts.

[158] See p. 122 above.

[159] Peter of Ailly, *Conceptus et insolubilia*, fol. 8^{rb}; Spade trans., § 103, pp. 38–39. The Latin is: "Secundo, non apparet modus possibilis talis compositionis. Nam si quis nihil affirmans vel negans habeat notitias aliquas simplices, et deinde formet propositionem, non apparet quae variatio in illis fiat propter quam plus adinvicem componantur quam prius." Compare Gregory, *Super primum et secundum Sententiarum* I, prol., q. 1, a. 3, fol. 4L–M (= Trapp ed., vol. 1, p. 33).

> nothing should have some simple acts of knowing, and then form a proposition [made up of them], it is not apparent what change has occurred in them on account of which they are [now] put together with one another any more than earlier.

This sounds perhaps as if Peter — and Gregory, whom Peter is continuing to quote very closely here — are thinking of the difference between merely entertaining a thought in the mind on the one hand and actually affirming it on the other. And perhaps that is really all they are thinking of.

But I think there is a more interesting argument latent here as well. Remember that the question was[160]: Are mental propositions put together out of "partial acts of knowing" so that one such partial act of knowing is the subject of the proposition, another is the predicate, and yet another is the *copula*?

So, let's consider: What is the difference between having the three concepts or mental acts: "Socrates," "is," and "mortal" (appropriately inflected, as described in the theory just discussed), and having the mental proposition or judgment "Socrates is mortal"? The answer seems to be that the difference lies in the fact that in the latter case the three acts are somehow put together (= *com* + *posed*).

In fact, there is an old and venerable theory, going back to Aristotle at least in spirit, of the intellect as "composing and dividing." According to that theory, the activity of the intellect as putting together is exactly its judgmental (= proposition-forming) activity. The mind takes the concept "Socrates" and the concept "mortal," and puts them together in an affirmative way ("composes" them); the result of that putting together is the mental affirmation "Socrates is mortal." Or it can put those same concepts together in a negative way ("dividing" them[161]); the result of that dividing is the mental denial "Socrates is not mortal."

But that theory, in its traditional form at any rate, won't answer the present question. For on that theory, the composing act of the mind, affirmative or negative, is just what plays the role of the mental copula, affirmative or negative. The mind puts the concepts "Socrates" and "mortal" together to form the judgment "Socrates is mortal" or "Socrates is not mortal," and that putting together is the mental copula "is" or "is not."

But in the question we are now considering, we have already taken account of the copula, as one of our three mental acts "Socrates," "is," and "mortal." The question is asking in effect what the difference is between simply a list of those three mental acts and the kind of mental unity that results when those three acts get together and interact to form a mental proposition.

To suppose that we need yet another mental act, a kind of mental "super-copula," to bind the subject to the original copula, and that copula to the predicate — that looks like a sure way into an infinite regress.

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[160] See p. 122 above.

[161] Don't be confused by the terminology. "Dividing" is a kind of "composing"; it is composing negatively.

So the traditional theory of the intellect as "composing" and "dividing" cannot, at least not without a lot more explaining, account for the difference between a simple list of the ingredients of a mental proposition and the unified proposition that results from those ingredients. Thus we still do not have a good story about how mental propositions properly so called can be complexes made up of real parts.

As it stands, of course, this argument is not a refutation of the view that mental propositions are complex. But it certainly is a challenge to that view.

a. Reply to This Problem

Nevertheless, there is a way out of this argument too, just as there was a way out of the earlier one about word-order. That is, this second line of reasoning does not suffice to prove Gregory's and Peter's claim that mental propositions don't have parts, any more than the first line of reasoning did.

You might, for example, say that the question[162] is badly formulated. The mental copula is not a part of the mental proposition in the same way the subject and predicate are. Rather, since the copula is supposed to be the mental act of conjoining the terms, you might argue that the mental copula is not a separable part of the mental proposition. You simply can't have the copula (the conjoining) without having the things conjoined (the terms), and without having the product that results from the conjoining (*i.e.*, the proposition or judgment).

So, when it is asked what is the difference between merely having the three concepts "Socrates," "is," and "mortal," and having the mental proposition or judgment "Socrates is mortal," the correct answer is: *None*. By having the copula "is," you *ipso facto* have the proposition too. The copula just is the putting together of the other terms to form the proposition. Since there is no difference, the fact that we can't find any difference can hardly count as an objection to the theory that mental propositions really have parts.

Perhaps this view is to be found in Buridan himself. For example, consider the passage quoted earlier[163]:

> For the word 'is', insofar as it is precisely a copula, signifies nothing outside [the mind] beyond the signification of the categorematic terms. Rather it signifies only the complexive concept by which the intellect forms propositions from the terms 'God' and 'God'.

So, for this problem as for the previous one about word-order, perhaps it is possible to avoid Gregory's and Peter's conclusion that mental propositions do not have parts, by holding that the other parts are held together by the copula, which is not itself a part like the others. But, even if this strategy is successful, in adopting it we go far beyond the basically straightforward picture that was Ock-

[162] See p. 134 above.

[163] Scott ed., p. 32; Scott trans., p. 79. For the context, see p. 114 above.

ham's usual view. For the copulas of spoken and written propositions are separable ingredients. They can be isolated and considered by themselves — without the terms they couple. At least you can do that for English or Latin.

If you can't do that with mental copulas, as Buridan perhaps suggests in the passage just quoted, then to that extent the structure of mental propositions fails to parallel that of spoken propositions.

Furthermore, in spoken and written language there are quite distinct propositions with copulas that are nevertheless only numerically distinct. The 'is' in 'The cat is on the mat' sounds the same as the 'is' in 'The hat is on the head' or the one in 'Diphtheria is a very serious disease'. The copulas there are mere duplicates of one another, specifically the same. But if, as Buridan perhaps suggests, the mental copula is inseparable from the terms it couples in the sense that you have different copulas for different pairs of coupled terms, then there are lots of different copulas — and they are different in kind, that is, "specifically" different. And of course the same thing holds for written language.

So, once again, the close parallel between spoken or written language and mental language breaks down. The relation between spoken language and mental language is very complicated. The one is not mirrored by the other even in those "favorable" cases that Buridan and Ockham allowed.

I. Summary of the Two Preceding Problems

Neither of the two arguments we have considered (and we have by no means discussed all the arguments Gregory and Peter raise) succeeds in showing that mental propositions properly so called really have no parts — as Peter and Gregory want to hold for some or all such propositions.

They do however succeed in showing that if mental propositions are composed of parts, their structure is not the straightforward kind of thing Ockham and Buridan seem to have had in mind. The structure of mental propositions is not accurately represented in spoken and written language — not even in favorable cases.

J. Additional Reading

For additional reading on the material covered in this chapter, see: John Buridan, *Sophisms on Meaning and Truth*, Scott trans., all of Chs. 1 and 6. Ch. 6 is on "conventional" signification, and so not directly about mental language at all. But in the course of discussing conventional signification, Buridan says a lot of interesting things about mental language. See also William of Ockham, *Summa of Logic* I, all of Chs. 3 and 13; Texts **(51)–(52)**, **(53)**. Also Peter of Ailly, Text **(80)**, for another use of the phrase "equivalent in signifying."

(We will have occasion to look at these last two passage more closely when we discuss the theory of "connotation" in Ch. 7, below. But they are of some interest even now.

Chapter 5: The Signification of Terms

To some extent we have discussed the notion of signification already, in Ch. 3 above. At that time, we saw both a basic agreement about the psychologico-epistemological criterion of signification (to signify $x =_{df.}$ to establish an understanding of x),[1] and at the same time a disagreement over what it is that spoken words immediately signify. Is it the corresponding concept? Or is it some external object?[2]

In the present chapter, I want to talk about a different kind of disagreement. If the former one was about immediate signification (particularly the immediate signification of spoken language), this new one is about ultimate signification. In effect, this new dispute is over what is conceived by a concept. Whereas the former one was over the role or use of language (is it to express thought, or is it to discuss things?), this new dispute is a metaphysical one.

Perhaps we can best get a handle on this new question by looking at a disagreement between William of Ockham and Walter Burley. Here, as is often the case, Burley's view is the conservative, more or less traditional one, while Ockham's is something of a novelty.[3]

The disagreement this time arises in the context of the correct way to define certain subcases of the semantic property known as "supposition." We can set aside the details of supposition-theory for now; we will talk about them later. But I will need to say something about supposition even here, since it is the context in which this new dispute emerges between Ockham and Burley. For the present, let's just say that supposition is reference. (That's all right as a first approximation, but we'll see later on that the situation is much more complicated than this.[4])

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[1] See Ch. 3, p. 63, above.

[2] See Ch. 3, pp. 83–87, above.

[3] It is not Ockham's metaphysical view that is especially novel, although there are innovations there too. What I am claiming here is rather that it is the semantic theory that is the novelty.

[4] See Chs. 8–9 below.

A. A Dispute Between Ockham and Burley

Both Ockham and Burley distinguish three main kinds of supposition: "personal" (for example, 'man' has "personal" supposition in 'Every man is an animal'), "simple" ('man' in 'Man is a species'), and "material" ('man' in 'Man has three letters').[5] For the most part (but not always), the two authors were in agreement over individual cases. That is, if presented with a list of propositions, Ockham and Burley would usually agree about which terms in those propositions had which main kind of supposition. But they disagreed over what was going on in some of those cases. And that is what I want to focus on now.

For example, look at Ockham's *Summa of Logic* I.64, § 2. There Ockham says that personal supposition occurs when a term supposits for (= refers to, stands for) its significate, that is, for what it signifies — whatever that might turn out to be:

> … whether that significate is **(a)** a thing outside the soul, whether it is **(b)** an utterance, or **(c)** an intention of the soul, whether it is **(d)** an inscription, or anything else imaginable.

Then he goes on to gives several examples. For instance (§ 3):

> [Here is] an example of the first case, **(a)**: In saying 'Every man is an animal', 'man' supposits for its significates. For 'man' is imposed only to signify these men. *For it does not properly signify anything common to them*,[6] but rather the men themselves, according to Damascene.

1. Ockham's Theory

The reference to "Damascene" here is to John Damascene (that is, John of Damascus), an eighth century Greek author, whose *Dialectica* had been translated into Latin in the thirteenth century and was available to Ockham.[7] There is some-

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[5] Do not read too much into this terminology. Do not, for example, think that "personal" supposition has anything especially to do with persons. The origins of the terminology have never been traced completely, but the juxtaposition of 'personal' with 'simple' suggests that the terminology arose in the context of speculation on the theological doctrine of the Trinity. Also, note that in the example of material supposition, we would nowadays put quotation marks around the subject term. But don't be misled. Although the theory of "material" supposition does many of the jobs of modern quotation marks, it does other jobs as well, as we shall see in Ch. 8 below.

[6] That is, a universal human nature.

[7] The *Dialectica* is really the first part of a larger text called *The Source of Knowledge* (Πηγή γνῶσεως), Damascene's main work. The correct title of the *Dialectica* is *"Philosophical Chapters"* Κεφάλαια φιλοσοφικά). The third part of *The Source of Knowledge* is an *Exposition of the Orthodox Faith* (Ἔκδοσις τῆς ὀρθοδόχου Πίστεως), translated into Latin (under the title *De fide orthodoxa*) c. 1148–1150 by one Burgundio of Pisa. (See Gilson, *History of Christian Philosophy in the Middle Ages,* p. 91 and p. 600 nn. 67–68.) The translation of the

thing of a problem about identifying the exact text Ockham is referring to here. Ockham's modern editors refer to a passage in Ch. 10 of the *Dialectica*,[8] but that text is in effect a discussion of the so called "Porphyrian tree," which divides the category *substance* into narrower and narrower species and subspecies and finally (in some versions) into individuals.[9] There is not a word there about signification, which is the whole point of the passage from Ockham.

Nevertheless, in Ch. 5 of the Greek text, there is another passage that is closer to what Ockham says. That chapter is omitted from the Grosseteste translation,[10] and although I have no idea how Ockham could have had access to it, I suspect it is the passage he had in mind[11]. Here it is[12]:

> But now a substantival utterance either signifies *what* the thing is or else *what kind* of a what it is. For instance, if one asks us what man is, we reply: an animal. Then if he asks what kind of an animal he is, we say: rational, mortal. And therefore a substantival utterance that picks out what kind of a what that thing is is called a difference. But what reveals what it is either expresses many species, and then it makes up a genus, or else [it expresses] many items differing in number and not in species, and then it makes a species.
>
> Now genus, for example substance, is primary. For 'substance' signifies both man and horse and cow, each one of which is called — and is — a substance, but each one a species. Now the one and the other, each one is a species.
>
> But species, for example man, is secondary. Now it signifies many, that is, each and every man, who differ in number among themselves. For Peter is one and Paul another. And they are not one, but rather two. But they do not differ in species, that is, in nature. For all are called men, and in fact they are [men].

Dialectica has also been attributed to Burgundio of Pisa, but Thomson, *The Writings of Robert Grosseteste*, p. 45, argues that it should be ascribed to Robert Grosseteste, the famous Bishop of Lincoln from 1235–1253. Grosseteste was active in translating other Greek works as well. On the date of the translation of the *Dialectica*, see *ibid.,* p. 49.

[8] William of Ockham, *Summa logicae*, p. 195 n. 1. The reference is to the Greek text in Migne, PG, vol. 94, cols. 571A. The corresponding passage in the Grosseteste translation of the *Dialectica*, is on p. 4 in § 8. Note that the Grosseteste translation circulated in two redactions, which were intermixed in the manuscripts. The arrangement of chapters in the translation is not the same as that in the Greek text as edited in Migne, and parts of the Greek text are omitted from the Grosseteste translation, including an important chapter to be discussed below.

[9] See n. 18 below.

[10] At least as presented in the Colligan edition: John Damascene, *Dialectica: Version of Robert Grosseteste.* The facts about Latin translations of Damascene's *Dialectica* could obviously benefit from further research.

[11] Ockham certainly didn't know Greek, so if this is the passage he is referring to, he was using a different version of the Latin text.

[12] John Damascene, *Dialectica,* Migne ed., PG 94, col. 542C.

Note that the passage does not really offer unequivocal support to Ockham's view. Ockham's view is this:

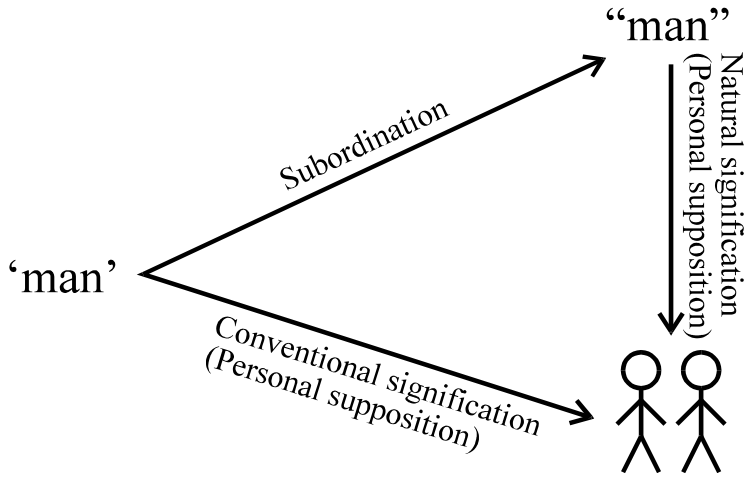

Figure 9: Ockham's Theory of Signification

Damascene agrees with Ockham about the species-word 'man', which signifies individual men, but oddly disagrees with Ockham when it comes to the genus-word 'substance'. The latter, he says, "signifies both man and horse and cow, each one of which is called — and is — a substance, but each one a species."

2. Burley's Theory

In any case, Ockham's view is as pictured in the figure. Contrast Burley's theory in his *Purity,* Ch. 3, §§ 28–30.[13] Burley thinks that when a term supposits for or refers to what it signifies, it is not in personal supposition but rather simple supposition. Now there is much more to this disagreement,[14] but in part at least the dispute is one over what terms signify.

In §§ 29–30, Burley clearly has Ockham in mind when he says "But some people reject this statement" that it is in simple supposition, not personal, that a term supposits for what it signifies. Burley thus disagrees with Ockham over the proper way to define the various main kinds of supposition (although they usually agree on which kind of supposition a given term has in a given proposition).

In § 30, Burley tells us that, on his view, the proposition 'Man is a species' is true when the term 'man' supposits for its significate. And he goes on (§§

[13] As explained in the *Bibliography* below, *'Purity'* abbreviates *The Longer Treatise On the Purity of the Art of Logic, Tract 1: "On the Properties of Terms."* Note that, as described in the *Bibliography,* I am using the preliminary translation on file with the Translation Clearing House, rather than the forthcoming translation in the series "Yale Library of Medieval philosophy." The paragraph numbers will be the same for this portion of Burley's text..

[14] See Spade, "Some Epistemological Implications," and Spade, "Walter Burley on the Simple Supposition of Singular Terms."

30, 32) — let me give you a little road-map of this portion of Burley's text — to tell us that what the term 'man' signifies is an Aristotelian secondary substance, that it is not something individual and particular, but rather something common and shared (§§ 32–33). That's not what Ockham said at all.

In § 34, Burley says he is not committing himself (at least not in that paragraph) on the question whether this common entity that is signified is something inside the mind (= a general *concept*) or outside the mind (= an external common nature or universal); his argument there is neutral on that point. Nevertheless, in § 35, he makes it clear that his own view is that the common significate is not just something in the mind — not merely a concept — but is rather an external common nature or universal.

Burley's theory may be diagrammed like this:

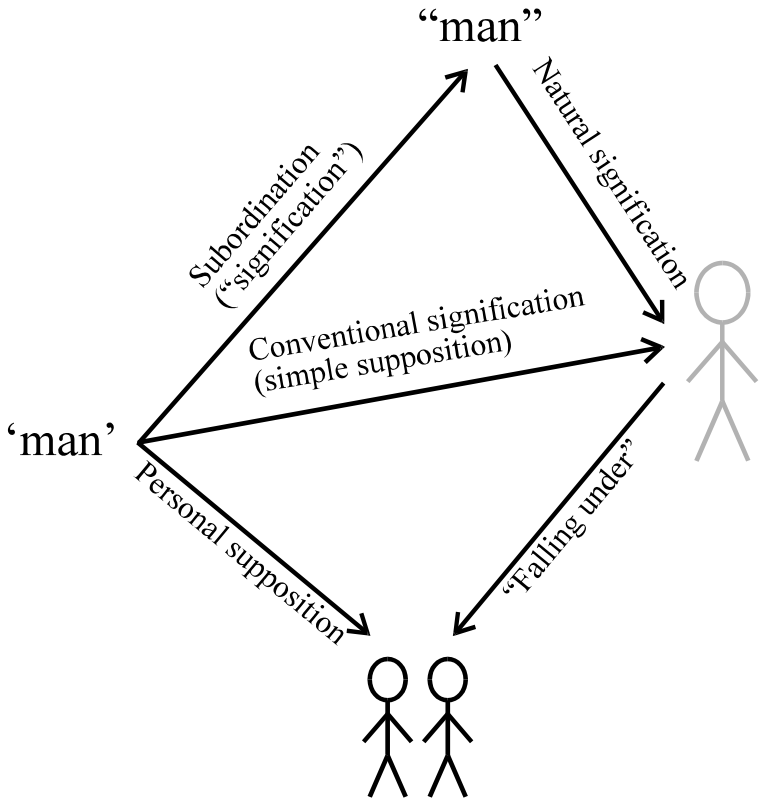

Figure 10: Walter Burley's Theory of Signification

(I have deliberately made the universal human nature rather gauzy and diaphanous, since universals are pretty spooky entities.)

For present purposes, the question here between Ockham and Burley comes to this: In the proposition 'Every man is mortal', for example, where both Ockham and Burley agree that the terms are in "personal supposition," and where both agree that the term 'man' refers to Socrates and Plato and other individual men, does that term refer to what it signifies or not? Burley says no; Ockham says yes. In short, what is the significate of that term?

3. Historical Antecedents of Burley's Theory

Burley's theory is more or less the standard or traditional one, going back to the thirteenth century and before. For example, William of Sherwood says in his *Introduction to Logic* (Text **(27)**):

> Now signification is the presentation of the form of something to the intellect.

He goes on to say that this form is a universal or common form, a species[15]:

> [Formal supposition] is divided as follows: one kind is simple, another personal. It is simple when a word supposits its significate *for* its significate. For example, 'Man is a species'. But [formal supposition is] personal when it supposits its significate not *for* [its] significate but *for* a thing that is under it. For instance, 'Man runs'. For running inheres in man in virtue of some singular.

Don't worry for now about all the technical vocabulary in this passage. It is perhaps not altogether clear what distinction Sherwood is making here with that vocabulary. But it *is* clear that Sherwood's theory is closer to Burley's than to Ockham's. The term 'man' has personal supposition in 'Man is running', and in simple supposition in 'Man is a species', and it is in the latter, Sherwood says, that the term 'man' supposits for or refers to what it signifies. In short, the term 'man' signifies a universal species, just as Burley says it does and as Ockham says it does not.

Again, Peter of Spain, in his *Summulae logicales,* says[16]:

> One kind of accidental supposition is simple and another kind is personal. Simple supposition is the taking of a common term *for the universal thing signified by it*. For instance, when 'Man is a species' or 'Animal is a genus' is said, the term 'man' supposits for man in general and not for any of its inferiors, and the term 'animal' [supposits] for animal in general and not for any of its inferiors. And likewise for any other common term. For example, 'Risible is a property', 'Rational is a difference', 'White is an accident'.

And a little later[17]:

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[15] Lohr ed., § 5.13, p. 266.11–15 (= Grabmann ed., p. 75.14–18). See Kretzmann trans., p. 107. With different examples, of course, it could just as well be a genus. But the point stands: it is not an individualized form, but instead something common.

[16] *Tractatus,* De Rijk trans., Trans. VI, § 5, p. 81.11–18. Compare Peter of Spain, *Language in Dispute,* Dinneen trans., p. 70.

[17] De Rijk ed., Trans. VI, § 7, p. 82.10–12. Compare Dinneen trans., p. 71.

> Personal supposition is the taking of a common term for its inferiors. For instance, when 'Man runs' is said, the term 'man' supposits for its inferiors.

Once again, this looks more like Burley's doctrine than like Ockham's. The "inferiors" of a common term are the things that "fall under"[18] the universal nature signified by that term.

Note, however that, for Peter of Spain, not every case of signifying is a case of signifying a common or universal entity. For example[19]:

> Thus, since every thing is either universal or particular, words that do not signify a universal *or a particular* must not signify anything.

The terms that signify particulars, for Peter, are singular terms,[20] whereas general terms signify universals.

It is not clear where either William or Peter stands in the dispute about the immediate signification of terms, that is, about whether they directly signify concepts or things (either universal or particular things). William of Sherwood never mentions concepts or mental language at all. And Peter of Spain explicitly states that his *Summulae* is confined to a discussion of spoken language[21]:

> Dialectic is the art that has the path to the principles of all methods. And therefore in acquiring the sciences dialectic ought to be prior.
>
> Now 'dialectic' is so called from *'dia',* which is 'two',[22] and *'logos',* which is 'discourse',[23] or from '*lexis*', which is 'reasoning'.[24] [So the whole word 'dialectic' means], as it were, a "discourse or reasoning between two parties" — that is, by the disputing [that goes on] between an opponent and a respondent.[25] But

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[18] The metaphor of superiority and inferiority in this talk comes from the so called "Porphyrian tree," which was a common diagram used to illustrate the doctrine in Porphyry's *Isagoge*. The diagram involved an "inverted"-tree structure with an Aristotelian category (a "most general genus") at the top or root-position, and various species and subspecies (sometimes also individuals) arranged as branches under it.

[19] De Rijk ed., Trans. VI, § 2, p. 79.12–14. Compare Dinneen trans., p. 69.

[20] Recall from Ch. 2, n. 23, above that a "singular term" in this sense is not just any old term singular in number, but rather a proper name, a demonstrative pronoun or a demonstrative phrase.

[21] De Rijk ed., Trans. I, § 1, p. 1.4–12. See Dinneen trans., p. 1.

[22] It isn't either; that's *'duo'*. Greek *'dia'* (= διὰ) means "through."

[23] That Latin is '*sermo*', which is as good a translation as any for '*logos*'. '*Sermo*' itself can be translated into English many ways, including 'word', 'statement', etc.

[24] More or less. It really means "a speaking," "speech." Peter plainly did not know Greek. He's getting these false etymologies from some traditional source or other.

[25] 'Opponent' and 'respondent' are important terms in the mediaeval *obligationes*-literature. For a first orientation to the *obligationes*-literature, see Stump, "Obligations: From the Beginning to the Early Fourteenth Century," and Spade, "Obligations: Developments in the Four-

> because disputation cannot be had except by means of discourse, or discourse except by means of an utterance, but every utterance is a sound, therefore one must begin with sound, as from what is prior.

Accordingly, at the beginning of his *Summulae* (Text **(20)**), he starts from the general notion of *sound*, and begins adding various features one by one to build up a clear picture of what his subject-matter is.

B. Ockham's Nominalism and Some of Its Consequences

There was a reason for Ockham to reject the older view, for his saying that words do not ("ultimately") signify universals or common natures but rather individuals. The reason, of course, is that Ockham was a nominalist and held that there simply are no universals or common natures in reality.

This takes a little explaining. In general, there were two notions of universals current in the Middle Ages. They are not necessarily incompatible; they are just two ways of approaching the problem. There was first of all a metaphysical notion of a universal as an entity that is (or at least can be) shared as a whole by many things at once, in some metaphysically appropriate way.[26] Ockham denies there are any universals like that. But there was also a logical or "predicational" notion of a universal, derived from a remark in *De interpretatione* 7, $17^{a}38$–39, where Aristotle says that a *universal is what is apt to be predicated of many*[27]:

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teenth Century." The terms 'opponent' and 'respondent' come from the discussion of disputation in Aristotle's *Topics* and *Sophistic Refutations*.

[26] This notion of a universal was introduced to the Middle Ages via Boethius' second commentary on the *De interpretatione*, Brandt ed., pp. 162.15–163.3. Boethius appears to have taken his discussion from Porphyry's *Exposition of Aristotle's Categories by Question and Answer*, published in *Porphyrii Isagoge et In Aristotelis Categorias commentarium*, Busse ed., p. 62.17–33. Porphyry was not discussing there anything having to do with universals, but instead Aristotle's remarks about homonymy at *Categories* 1, $1^{a}1$–2. So although Boethius was borrowing liberally from Porphyry, he deserves credit for seeing how the latter's comments could be applied to an entirely different kind of problem. For a translation of Boethius' discussion, see Spade, *Five Texts on the Mediaeval Problem of Universals,* p. 22, §§ 14–19. For Porphyry's passage, see his *On Aristotle's Categories,* Strange trans., pp. 41–42.

[27] In the latter sense, there of course are universals, since any general term ("common name") will count as one. Nominalists then (on this definition of a universal) hold that universal terms are the only universals there are; realists hold that in addition there are certain non-linguistic entities that can also be said to be "predicated of many." Nowadays, of course, we tend to restrict the term 'predication' so that only terms are predicated. But that is merely stipulation, not (or at least not usually) a substantive theoretical claim. If we wish to reserve the term in this way, then the realists' position can be reformulated as holding that the linguistic relation of predication mirrors a single and more basic metaphysical relation, and that this metaphysical relation can be one-many. Whether we want to call this metaphysical relation (if there is one) a kind of "predication" is a purely a terminological matter. Many mediaevals did, and I know of no good objection to their practice.

> Now since some things are universal and others particular (I call "universal" what is naturally apt to be predicated of several things, and "particular" what is not — for example, man [is one] of the universals, but Kallias [is one] of the particulars) …

What Ockham and fourteenth-century nominalists in general do, in a sense, is to take the realists' notion of a universal entity, and transfer it into the mind, where it becomes the notion of a universal concept. A universal concept is of course not universal at all in any metaphysical sense of the word. But, since concepts are terms in mental language, a universal concept is universal in the other sense — it can be predicated of many.

Thus, the only kind of "universals" Ockham will allow are universal terms. These are, primarily and most basically, general concepts in the mind, and then, secondarily and derivatively, the spoken or written terms subordinated to such general concepts. Such terms — spoken, written or mental — are "universal" only in the logical sense; they are universal by signification or predication. There are no common natures out there in reality. Once Ockham and the nominalists move the realists' universals into the mind in this way, all the things universals are typically called upon to do in a philosophical theory now have to be done by concepts. And so it is not surprising to find mediaeval nominalists emphasizing the theory of concepts. The nominalists are typically the ones who develop the theory of mental language. They are the ones who call attention to those passages in Aristotle's *De interpretatione,* and in Boethius' commentaries on it, that suggest the doctrine of mental language.

In William of Sherwood or Peter of Spain, there is not much mention of those passages from the *De interpretatione* or from Boethius' commentaries on it — and for that matter, realists in general do not discuss those passages very much. Of course, if a realist writes a commentary on the *De interpretatione*, he is going to have to say something about the three-fold division of language that is set up there. But the fact remains that realists are not much concerned to develop the notion very far.

So in general, it is the nominalists who do the most to work out a detailed theory of mental language; realists do not. Like all such sweeping claims, this one should be taken with a certain caution. But it is good rule of thumb.

Now we already know that Ockham has a theory according to which we do not typically think of concepts when we hear a word. For him, spoken words do not immediately signify concepts. That is, the subordination relation for Ockham is not also a kind of signification relation. That much we have already seen.[28]

Therefore, since concepts[29] are the only universal or common things there are in Ockham's ontology, Ockham has to say that general terms do not as a rule signify universals, which is of course what he does say. In other words, it's not just that Ockham doesn't believe in universals in the realists' sense, although

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[28] See Ch. 3, pp. 79–79, above.

[29] And, in a derivative sense, spoken and written terms. But the same considerations will apply there.

that's true too. Even universals in his own sense — universal concepts — are not as a rule signified by general terms.

Burley, on the other hand, is a realist. We saw earlier[30] that, while Burley is willing to say that in a sense terms signify concepts, and in particular general terms signify general concepts, he nevertheless recognizes that this is not a strict and proper way of speaking. He agrees with Ockham that spoken terms do not in general make us think of concepts, and so they do not in general signify concepts. But, because he is a realist, Burley can agree with Ockham on this point, and still hold that spoken terms do signify universals. And that is exactly what he does. Burley has other universals he can appeal to — real, metaphysical universals.

C. The Pros and Cons of Realism and Nominalism

Let's talk a little more about realism and nominalism, and see how the difference is reflected in the dispute between Ockham and Burley.

Traditionally, the arguments against realism have always been metaphysical ones. How could one thing be common to (or predicable of) many things at once in the way a universal or common nature is supposed to be? Isn't that a metaphysically suspect notion? (Such arguments may be ultimately answerable, but that's not the point. The point is that they *are* the arguments.)

On the other hand, the traditional arguments against nominalism have always been epistemological ones. If there is nothing really common or universal out there in reality corresponding to our general concepts and common names, then what grounds the formation of those general concepts and common names? If there are no such corresponding entities, then doesn't that make our so-called knowledge of the world (which largely proceeds via such general terms and concepts) a pure fiction? (Again, perhaps these arguments can be answered, but they *are* the arguments.)

Nominalists, then, typically have a pretty lean and mean metaphysics, but a pretty strained epistemology. On the other hand, realists typically have an easier time with epistemology, but they have a lot of explaining to do in their metaphysics. (I'll say it once again and then not say it again: I am not adjudicating between realism and nominalism here, but simply describing where the traditional pressures lie.)

Thus, as we might expect, the objections Burley the realist raises against Ockham the nominalist are of a predominately epistemological sort.

D. Burley's Arguments Against Ockham

Let's look at some of Burley's arguments, from Ch. 3 of his *Purity.*[31]

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[30] See Ch. 3, p. 84, above.

[31] Recall that Burley's *On the Purity of the Art of Logic* appears to have been written in response to Ockham (see Ch. 2, p. 44, above) — and perhaps in response to Ockham's *Summa logicae* in particular. Actually, this is true only of *The Longer Treatise,* which is the only one we

1. First Argument

Look first at § 38 of that text. The argument there concerns the terms 'white' and 'black'.

First a point of language. In English, 'white' is used ambiguously. Sometimes it refers to the color itself. We speak of "the color white." But sometimes also the word refers to the thing that has that color. Thus we say "The chalk is white," and we don't mean that the chalk *is* the color but rather that it *has* the color.

This isn't so in Latin. In Latin there is a difference between the adjective 'white' (= *'albus'*) and the noun 'whiteness' (= *'albedo'*).[32] And *they are never confused in Latin*. So don't you be confused in English in the following discussion. The argument in Burley's § 38 concerns the terms 'white' and 'black', not the terms 'whiteness' and 'blackness'.

The terms 'white' and 'black', in the normal case, refer to individual white things or black things. But of course, reference, we said,[33] is treated in what is called supposition-theory, which is not what we are primarily concerned with here. On the contrary, what we are mainly concerned with here is signification, which is something different.[34]

So while both Burley and Ockham will agree that 'white' and 'black' refer to or supposit for the individuals that bear the respective colors, the question here is not that but rather what those terms signify. For Ockham, the terms not only supposit for individual white and black things, respectively, they also signify those same white or black things. That is to say, when we hear the term 'white', we are made to think of individual white things. We are *not* made to think of any color whiteness, in virtue of which those white things are white — and we are certainly not made to think of any universal such quality. So too for the term 'black'.[35]

It is the point about universals that Burley is disagreeing with in § 38. It is not altogether clear there whether Burley thinks the term 'white' signifies a universal whiteness (the quality), or whether he thinks it signifies a universal white thing (a universal "bearer" of whiteness). But in any case, Burley does think the term signifies a universal. Here is his objection:

> If it is said that 'white' signifies the subject of whiteness — for instance Socrates or Plato, for whom whiteness is an accident — I argue to the contrary: If this were true, then assuming that Socrates

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are concerned with for now. If that is the case, then *On the Purity of the Art of Logic* is the later work. (See the discussion in Walter Burley, *De puritate,* Boehner ed., "Introduction," pp. vi–xvi.) But the evidence is perhaps not altogether decisive.

[32] English, to be sure, allows us to make this distinction by using the abstract suffix '-ness'. But it also allows us to ignore the distinction, and that is the point here.

[33] See p. 139 above.

[34] We will discuss what this difference is in Ch. 8 below..

[35] The bald claim that these terms do not make us think of the colors themselves will have to be qualified later, when we discuss "connotation-theory" in Ch. 7 below.

> is first white and afterwards black, the name 'white' would first signify Socrates, and afterwards the name 'black' would signify Socrates. So, assuming that everything that today is white should become black tomorrow, then everything that 'white' signifies today 'black' would signify tomorrow. And so utterances would continually be falling away from their significates. Neither could anyone move his finger without an utterance's by that fact falling away from its significate. For when the finger is still, the utterance 'still' signifies the finger, and when the finger is moved, that utterance would not signify the finger, which seems absurd.

Burley's claim is that what the word 'still' brings to mind in me ought not to change with every wag of someone's finger. If something on the other side of the world changes color from white to black,[36] that should not mean that I think of something different when I hear the term 'white' or 'black'.

a. Ockham's Reply

This seems to be a good point and a powerful objection. But Ockham appears to be aware of it and in *Summa of Logic* I.33, in effect responds to it.[37] There he says there are four kinds of signification — i.e., four senses of the term 'signify'.[38] The last two ways mainly concern connotation-theory, and we'll just ignore them for now. But the first two ways are relevant here.

> **(1)** In the first sense, a term *t* signifies a thing *x* iff you can truly say 'This *is* a *t*' while pointing to *x.* The important thing to note here is the present tense of the verb.
>
> **(2)** In the second sense, *t* signifies *x* iff you can truly say 'This *is*, or *was*, or *will be*, or *can be* a *t*' while pointing to *x.*[39]

In the first sense, the term 'man' signifies only presently existing people. In the second sense, it signifies all past, present and future people — and for that matter, people who never exist but might (= "merely possible" people). Note that Ockham could have shortened his description of the second kind of signification by using only the last disjunct, in effect saying simply that you can point to *x* and truly say "This can *be* a *t.*" (The other cases he lists all imply this one.)

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[36] Many mediaeval examples, in a variety of philosophical contexts, involve Socrates' and Plato's changing colors from white to black or conversely. You'll soon get used to it. No one is quite sure why they used such odd examples, but there seems to be no racial overtones to the practice. In effect 'Socrates' and 'Plato' are just names for arbitrary material objects.

[37] I say "in effect" because it is not completely clear whether he is responding to the objection or anticipating it. See n. 31 above.

[38] The passage is closely paraphrased in Ockham's *Quodlibet* V, q. 16, Wey ed., lines 14–47 (pp. 543–544). See Freddoso and Kelley trans., pp. 454–455.

[39] Note that Ockham apparently doesn't see any problem about "pointing" to non-existing objects.

Now if 'signify' is taken in the first of these two senses, Burley's criticism applies, as Ockham himself recognizes in *Summa of Logic* I.33, § 3:

> Taking 'to signify' in the first sense, and [the term] 'significate' corresponding to it, an utterance (and even a concept) often falls away from its significate through only a change in the thing. That is, something ceases to be signified that was signified earlier.

But in the second sense, the objection is avoided. Ockham goes on in the same paragraph:

> [But] taking 'to signify' in the second sense, and [the term] 'significate' corresponding to it, an utterance or concept does not fall away from its significate through only a change in the external thing.

In practice, Ockham almost always uses the term 'signify' in this second sense, unless he explicitly says otherwise. Thus Ockham would reply that Burley's objection fails if 'signification' is taken in the most usual sense of the term. The objection holds if the word is taken in the first sense, but that is not a real problem. The only reason Burley thought it was a problem is that he took it for granted that the signification of terms should not change with every change in the things themselves. And he's right — they shouldn't, in the *second* sense of 'signification'. But in that same sense, they don't change that way on Ockham's theory.

That is the distinction between the first two kinds of signification in Ockham's theory, and I suspect he makes it precisely in order to reply to (or perhaps to forestall) objections of exactly the kind Burley raises.

b. Difficulties

But there are additional difficulties. If, as Ockham certainly would allow, it is at least possible, for any given black thing, that it turn into a white thing, or vice versa, and if we take signification in his second sense, then 'black' and 'white' have exactly the same significates, and so would seem to be synonymous. When we hear the term 'black', it would seem to signify for us exactly the same things as the term 'white' signifies. And this seems to be just as serious an objection as Burley's original one, which was the reason for adopting this second sense of 'signification' in the first place.

As it turns out, Ockham can get around this particular example by appealing to his doctrine of connotation, the details of which we will examine in Ch. 7 below. But let me say something briefly about it now. The basic text here is *Summa of Logic* I.10.

In that chapter, Ockham says there is a difference between signifying something primarily and signifying something secondarily.[40] Without worrying about the details for now, we can say that connotative terms will signify some things primarily and some things secondarily, whereas non-connotative (= absolute) terms will signify whatever they signify primarily only.

'White' (the adjective) is a connotative term for Ockham, signifying white things (or *possible* white things) primarily and whitenesses (or *possible* whitenesses) secondarily.[41] (Both the first and the second sense of 'signify' in *Summa of Logic* I.33, are kinds of primary signification. The third and fourth senses have to do with secondary signification.) Similarly, 'black' will primarily signify black things, and secondarily signify blacknesses.

Now on Ockham's theory two terms are synonymous when whatever the one signifies *in any way*, the other signifies *in the same way*.[42] Thus 'white' and 'black' will not be synonymous on Ockham's theory after all, and he can avoid the difficulty raised here. The two terms signify exactly the same things in the second sense of primary signification (= the second sense in Ch. 33), but they signify different things secondarily. 'White' signifies whitenesses secondarily, but not blacknesses, and 'black' signifies 'blacknesses' secondarily, but not whitenesses. And even if it is possible, for any black thing, that it become white, or vice versa, it is probably not possible for a blackness to turn into a whiteness, or vice versa.

Ockham can therefore answer the objection in this particular case, because 'white' and 'black' are connotative terms. Nevertheless, the question obviously arises: Can Burley's objection be generalized to apply to non-connotative terms as well? If so, then Ockham would appear to be in deep trouble.

The answer to this question would take us further into Ockham's metaphysics than I want to go in this book. But I can at least indicate the kinds of issues that are involved.

Non-connotative (= absolute) terms for Ockham seem to be in effect what nowadays are called "natural kind" terms. Since Ockham cannot appeal to connotation-theory in the case of absolute terms, the question whether he has a complete answer to Burley's objection reduces to the question whether a thing of one "natural kind" can ever change into a thing of another "natural kind." For example, can one ever point to a human being and truly say "This can be a celery-plant" —that is, for whatever it is one is pointing to that is now a human being, is it possible for *that* to be a celery-plant? The answer to this question is not obvious. What if, for example, a human being dies and the body decomposes into its chemical constituents and returns to the soil, and those constituents are then organically reabsorbed into a celery-plant? These are deep questions about identity

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[40] Don't be confused. 'Primarily' and 'secondarily' here do not refer to the "first" and "second" senses of 'signify' distinguished in *Summa of Logic* I.33, which we have just looked at. This is a different distinction entirely.

[41] Ockham is a nominalist, so that for him every white thing has its own whiteness. Hence he can speak of 'whitenesses', in the plural.

[42] See *Summa of Logic* I.6. Ockham says the same thing in *Quodlibet* 5, q. 10 (Text **(53)**).

through change, and have to do as much (maybe more) with metaphysics as they do with logic.

2. Another Objection

Burley has another line of objection, in *Purity,* §§ 33–34. Here is what he says:

> Again, the name 'man' signifies something first.[43] And it does not first signify Socrates or Plato, because in that case one who heard the utterance and knew what was signified by the utterance would determinately and distinctly understand Socrates, which is false. Therefore, the name 'man' does not first signify something singular. Therefore, it first signifies a common [entity]. And that common [entity] is a species. Therefore, what is first signified by the name 'man' is a species.
>
> I do not care for the present whether that common [entity] is a thing outside the soul or a concept in the soul.[44] Rather it suffices merely that what the name first signifies is a species. Thus 'Man is a species' will be true insofar as 'man' is taken for its significate. This is confirmed, because a name is not imposed except on the known …[45] But he who imposed the name 'man' to signify did not know me or John who is now present. Therefore, the name 'man' does not signify me or John who is now present…

Again, this is an epistemological objection. This time, the objection applies to Ockham's second as well as to his first sense of signification distinguished in *Summa of Logic* I.33. How can a sign make you think of (= signify) something completely unknown and unsuspected by you? Ockham's theory that general terms signify individuals — either all presently existing ones (in his first sense of signification) or else all past, present, future and merely possible ones (in his second sense of signification) — would seem to have exactly such an undesirable consequence. And so, Burley's objection concludes, general terms do not signify individuals at all; they signify universals.

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[43] On this notion, see Burley, *Purity,* n. 36 to § 28.

[44] Recall that Ockham had moved the realists' universals into the mind where they became general concepts. See p. 147 above.

[45] And then he cites some passages from Averroes (the great Islamic commentator on Aristotle) and from Boethius. I'll skip those here.

a. Ockham's Reply

Ockham has a reply to this objection too. A full account of it would take us deeper into his epistemology than I plan to go in this book. But, in outline, it runs like this:

The one who first imposed signification on the term 'man' — that is, the one who first set up the subordination convention we still use today for that word — did indeed know me and John (whoever he is), but in a "confused" way.

To describe it as "confused" here is not to say that it is somehow inferior, or that there is anything bad about it. When Ockham is talking about "confused" concepts, he does not mean "muddled" concepts, or the concepts had by someone who is all perplexed or in a daze. Neither does he mean what are today sometimes called "fuzzy" concepts (that is, "vague" ones). Rather, he means a *con + fused* concept — that is a fused-together concept, one that is "composite" in a certain way.

In his relatively early *Commentary on the De interpretatione*, he explains what he means (Text **(37)**):

> To the first [objection],[46] it can be said that by such a confused intellection singular external things are understood. For example, to have a confused intellection of a man is nothing else than to have a cognition by which one man is no more understood than another, and yet by such a cognition a man is more cognized or understood than [is] an ass. This is nothing else than for such a cognition to be more similar, in some way of being similar, to a man than to an ass, and no more [similar] to this man than to that one.

Ockham appears to recognize that this is perhaps a slightly uncomfortable view. Immediately afterwards in the same passage, he defends the theory:

> In that respect, it seems it has to be said as a consequence that an infinity [of things] can be cognized by such a confused cognition.[47] This seems no more unthinkable than the fact that by the same love or desire an infinity [of things] can be loved or desired. But the latter does not seem unthinkable. For someone can love all the parts of some continuum, which are infinite. Or he can long for all the parts of the continuum to endure in being. Yet by such a longing, nothing is longed for except some part of the continuum — and not one any more than another. They all have to be longed

[46] Ockham had already raised this very objection against his own doctrine.

[47] Actually, that's only true if we are thinking in terms of Ockham's second sense of signification in *Summa of Logic* I.33. The number of presently existing human beings is large but not infinite; it is number of *possible* human beings that is infinite. Note that this supports what I said on p. 151 above, that Ockham almost always uses the term 'signify' in the second of the four senses he distinguishes in *Summa of Logic* I.33.

> longed for, and yet they are infinite [in number]. Likewise, one can long for there to be all the men who can be, and yet they are infinite, because an infinite [number of men] can be generated.

For example, suppose you have a very beautiful curve,[48] like the following one:

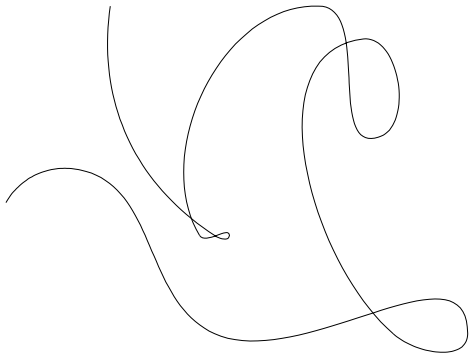

Figure 11: A Most Lovely Curve

Let's say you like this curve a lot. In fact, you just *love* it. You don't want it to be changed at all. You "long," as Ockham puts it, for it to stay exactly as it is — *every point of it*. The fact that there is an infinity of such points, he observes, does not seem to make this a problem. Sometimes we do want such things. You love every point of the curve, but you don't love each one of them distinctly; you love them, as he says, "confusedly." And that doesn't mean you love a universal. It's not the universal "point in general" you love; it's *these* points. So too, Ockham says, if that is no problem, when why should there be a problem in conceiving a infinitude of things in a concept, even though we are not distinctly aware of each one of them separately? And this doesn't mean, any more than before, that we conceive some kind of universal entity.

i. Concepts as Natural Likenesses

Whatever you think of Ockham's analogy, look back to Text **(37)**. We are back again with the view that concepts are similar to the things they are concepts of (= the things they signify) — they are natural likenesses.[49] The point I want to emphasize here is that this "similarity" or "likeness" is something that admits of degrees. In the passage mentioned, Ockham says the things a concept signifies are all such that:

(a) The concept is like every one of them.

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[48] I picked a curve because it fits Ockham's text — it's continuous.

[49] See Ch. 3, p. 77, above.

(b) It is not like any one of them more than it is like any other one; it is equally like all of them.

(c) It is like any one of them more than it is like anything else — anything that is not signified by the concept.

Note these are the only features of the "similarity"-relation that really do any work in Ockham's theory of concepts as natural signs. Apart from these purely formal characteristics, it is very difficult to pin down exactly what it means to say that concepts are natural likenesses of their objects. This is true for everyone who talks this way in the Middle Ages, not just for Ockham.

ii. Ockham's Two Main Theories of Concepts

Ockham himself had at least two distinct theories of concepts that he entertained at one time or another during his career.[50] This is not the place to discuss the merits and defects of these theories in detail. But at least something needs to be said about them. The two theories, in brief, are these:

(1) First, the so called *"fictum"*-theory. This is a theory we find also earlier in the Middle Ages in Peter Abelard,[51] Peter Aureoli (a Frenchman who was a little earlier than Ockham, and who influenced him to some extent),[52] and others. On this theory, a concept is the object of a certain kind of mental act. In other words, it is a "thought-object." In modern terminology, the concept is the "intentional object" of an act of intellection.

The main thing to know about the *fictum* theory is that *ficta* are not real entities.[53] They have the kind of "spooky" being intentional objects have in at least certain versions of modern phenomenology.[54] In mediaeval terminology, they have an "objective being" (= *"esse objectivum"*), the kind of being "objects of thought" have, not a "subjective being" (= *"esse subjectivum"*), the kind of being "real" things have, real subjects of real properties.[55]

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[50] See Adams, "Ockham's Nominalism and Unreal Entities," "Ockham's Theory of Natural Signification," and *William Ockham*, Ch. 3. See also Gál, "Gualteri de Chatton."

[51] I have in mind Abelard's doctrine of the *res ficta*. Be warned: there is considerable dispute about the proper interpretation of Abelard's views on such matters. For my own interpretation, see my review of Tweedale, *Abailard on Universals*, especially pp. 481–482 (of the review, not of Tweedale's book). Note that I am not claiming that Abelard identifies his *res fictae* with concepts (he doesn't, as I understand him), but only that he has them.

[52] Alternative forms of his name: Peter Aureol, Peter Oriole, Petrus Aureolus, Petrus Aureoli, etc. On Aureoli, see Emmen. For the theory, see Peter Aureoli, *Commentariorum* I, d. 9, a. 1 (319f.).

[53] The word '*fictum*' is the perfect passive participle of *'fingo'*, to make up, fabricate. We get 'feign' from it.

[54] I don't mean to put too much weight on the parallel with phenomenology. Still, it is well-known that Franz Brentano regarded his own theory of intentionality as derived from mediaeval "scholasticism." This is exactly where it came from.

[55] Note that the terms 'objective' and 'subjective' have completely reversed their meaning since the Middle Ages. What was called "subjective" then, we call "objective" — it's really

Ockham held this theory of concepts in his early writings — for example, in his Oxford *Commentary on the Sentences*.[56] He continued to discuss it and to regard it as a plausible and arguable view in some of his later writings — for example, in his *Commentary on the De interpretatione*.[57] Already by that time, however, he was beginning to favor another view, which he finally came to settle on wholeheartedly[58]:

(2) The quality-theory. On this second theory, the concept is a real quality inhering the mind just like any other real property. It has an *esse subjectivum*. There is no more of this *"esse objectivum"* talk with the quality-theory. Just what kind of mental quality the concept is on this theory is a matter subject to negotiation. Ockham distinguished various possibilities, but eventually came to think that the intellectual act itself could do everything that was required. Thus, the theory he finally adopted is called the *intellectio*-theory — the concept just *is* the act of thinking, the "intellection." The concept "man," for instance, is the very act of thinking of men. And that act is a kind of real quality of the mind; it's something that really goes on up there.

Here, for example, is what he says in *Summa of Logic* I.15[59]:

> Therefore, it is to be granted without qualification that no universal is a substance, however it is considered. Rather every universal is an intention of the soul, which according to one likely opinion does not differ from the act of understanding. Hence, they[60] say that the intellection by which I understand a man is a natural sign of men, just as natural [a sign] as a groan is a [natural] sign of sickness or sadness or pain. It is such a sign that it can stand for men in mental propositions, just as an utterance can stand for things in spoken propositions.

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out there, quite apart from any observer. What they called "objective" we call "subjective" — mind-dependent, produced by thought. This reversal of meaning is in part why beginning students have so much difficulty with Descartes' notion of "objective reality" in the third *Meditation*. It would be interesting to trace out just when this reversal took place. I have not pursued the question carefully, but I suspect it has something to do with Kant.

[56] See William of Ockham, *Scriptum*, d. 2, q. 8, Brown & Gál ed., pp. 271.14–289.10.

[57] William of Ockham, *Commentary on the De interpretatione* I, Prologue, § 7, Gambatese & Brown ed., in William of Ockham, *Expositionis*, pp. 359–361.

[58] William of Ockham, *Commentary on the De interpretatione* I, Prologue, § 9, Gambatese and Brown ed., in William of Ockham, *Expositionis*, pp. 363.4–369.169. See also § 6, pp. 351.4–358.206.

[59] William of Ockham, *Summa logicae,* Gál *et al.* ed., p. 53.78–85.

[60] This includes Ockham himself by this stage in his career.

iii. Why Did Ockham Abandon the *Fictum*-Theory?

Now why do you suppose Ockham felt compelled to abandon the *fictum*-theory? He doesn't explicitly tell us anywhere.[61] But whatever his actual reasons were, here are some relevant considerations:

What kind of being does a *fictum* or intentional object have? Ockham tells us in his *Commentary on the De interpretatione* (Text **(39)**) that "their being is nothing other than their being cognized."[62]

In the same discussion (Texts **(39)–(40)**), he in effect divides beings into two kinds:

(a) Mind-dependent, intentional objects, which have "intentional being" or *esse objectivum*. We just described those. Their being is their being cognized.

(b) Real things, the being of which is *not* the same as their being cognized. Being in this sense is not an *esse objectivum*, but an *esse subjectivum*. It is this kind of being, it turns out, that is subdivided into the ten Aristotelian categories (into "substance and accident").

Given that much, there is already a problem for the *fictum*-theory. How can a *fictum*, which is not even in one of the Aristotelian categories, be similar to real beings, which are? The *fictum* must be similar to real beings in this way if concepts are *ficta* and are also "natural likenesses" of the things they naturally signify.[63]

Certainly the definition of similarity Ockham gives in *Summa of Logic* I.10, § 8, won't work. There he says:

> For if 'similar' is defined, it should be put like this: "The similar is something having such a quality as [something] else has," or it should be defined in some [other] way like that.

This definition is put in terms of two similar things' having the same kind of quality. Note that Ockham does not say that they have *the same* quality, since that would make the quality a universal (shared by many things at once in the appropriate way). Rather, what he has in mind is that there is a quality of the one that is an exact duplicate of a certain quality of the other.

But this won't work on the *fictum*-theory of concepts. The *fictum* is not even in one of the Aristotelian categories! It doesn't have any qualities that are exact duplicates of the qualities of real things. To put it as strongly as I know

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[61] Nevertheless, see the evidence discussed in the sources cited in n. 50 above. It appears that Ockham's contemporary and fellow-Franciscan Walter Chatton was importantly influential in arguing him out of the *fictum*-theory. See especially, Gál, "Gualteri de Chatton."

[62] The parallel with Berkeley here is obvious and striking.

[63] See Ch. 3, p. 77, and p. 155 above. Ockham himself raises this objection in Text **(41)**

how, the *fictum*, along with all its fictive qualities, differs as much from real things and their real qualities as *the unreal differs from the real*. And that is a pretty big difference indeed.

This is a serious objection. Ockham had recognized it as early as his *Commentary on the Sentences*, and tried to answer it. Here is his statement of the objection[64]:

> Second, it seems that such [*ficta*] are not like things. For no accident can be made similar to a substance. But the *fictum* is further from a substance than any accident [is]. Therefore, it cannot be a likeness of a thing outside the soul.

In his reply, Ockham says[65]:

> To the second [doubt], they[66] would say that such *ficta* are not really similar [to external things], but are more dissimilar and further from a substance than accidents [are]. Yet they are such in objective being as other [things] are in subjective being …

The first part of this reply seems to grant the basis for the objection: There is no literal similarity between concepts as *ficta* and what they are concepts of. Instead, there is a kind of quasi-similarity in the sense of some kind of structural isomorphism between concepts as *ficta* and what they are concepts of. But this means that concepts are similar to their objects only in an equivocal sense. There is no real similarity there at all, which seems to be contrary to the theory that concepts are "natural likenesses" of their objects.

But in the last sentence of the quotation, Ockham goes on to give a kind of "counterfactual" reading of 'natural likeness': *If* the concept (here regarded as a *fictum*) *were* to exist as a real being (with an *esse subjectivum*), then it *would* be literally similar those things.

As I have said,[67] it is not clear exactly what considerations led Ockham to abandon the *fictum*-theory for the *intellectio*-theory, although this objection might well have been among them.

But it shouldn't have been. For, first, it appears that Ockham has answered his own objection with his counterfactual reading of natural similarity. You may, of course, think his answer is not good enough, and you may be right. But there is no text that I know of where Ockham himself explicitly objects to that counterfactual reading.

Second, even if Ockham did come to think that his counterfactual reading of natural similarity is not good enough, notice that the original objection, as he raised it, works just as well against the *intellectio*-theory. In fact, in the very statement of that objection, he says "no *accident* can be made similar to a sub-

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[64] William of Ockham, *Scriptum* d. 2, q. 8, Brown & Gál ed., p. 282.1–4.

[65] *Ibid.,* p. 282.16–22.

[66] This includes Ockham himself at this stage of his thinking.

[67] See p. 158 above.

stance." Now acts of intellection, whatever they are, are definitely not substances. So, if they are not *ficta* but real beings, then they must be some kind of accident.[68] Hence, on his own grounds, they cannot be really similar to substances after all.[69]

b. Concluding Remarks on This Objection

Recall where we are. Burley had objected that, contrary to what Ockham's theory seemed to require, we are not distinctly aware of each individual man whenever we have the concept "man." Ockham replied by appealing to the notion of a "confused" concept, and then went on to explain this in terms of the theory of concepts as natural likenesses of their objects. We have now pushed that theory about as far as it can go. Whether it can be defended in the end remains an open question, at least to my mind.

But notice that it doesn't really matter. The theory of concepts as natural likenesses is a notorious theory, and has been subjected to criticism throughout the history of philosophy. But, although Ockham certainly does think of concepts in this way, and in fact appeals to this theory to explain "confused" concepts, the only features of the "natural likeness" relation that enter into his semantic theory in any real way are these[70]:

(a) The concept is like every one of them.

(b) It is not like any one of them more than it is like any other one; it is equally like all of them.

(c) It is like any one of them more than it is like anything else — anything that is not signified by the concept.

Any natural (non-conventional) relation that satisfies these three requirements will do every semantic job Ockham does with his "natural likeness."

3. Still Other Objections

Burley is by no means done with his objections. He has several others too, and let's look at some of them briefly. First, consider Burley, *Purity,* § 40:

> Again, it is apparent that a term does not always have simple supposition when it supposits for an intention in the soul. For 'Every intention in the soul is in the soul' is true, and the subject

[68] In fact, Ockham thinks they belong to the category of quality. But that is another story.

[69] Or, if you insist that everything is similar to everything else in some degree or other, it would still seem that concepts would be more similar to other accidents than they are to substances. And that's just as bad, since according to Ockham, concepts are more like the things they are concepts of than they are like anything else. See p. 156 above.

[70] See pp. 155–156 above.

> here supposits for an intention in the soul. Nevertheless, it does not supposit simply.

We will not be talking about supposition theory directly until Ch. 8 below. Nevertheless, let me just warn you now that this objection completely fails as an objection to Ockham's theory. Ockham, as it will turn out, does not define simple supposition in such a way that just any term whatever that happens to supposit for an intention in the soul will have simple supposition, as the objection presupposes.

I am not sure whether Burley has simply mistaken Ockham's view here (although that seems to me unlikely, since Ockham is pretty clear about it), or whether Burley is referring to someone else entirely. Certainly the general force of this entire series of objections in Burley is directed mainly against Ockham. But in any case, if this particular objection is directed against Ockham, it is based on a distortion of his view.

In this same connection, look at the objection in Burley's § 35:

> As for what they say — that 'man' signifies an intention in the soul, and that that intention is a species — I say …

The argument that follows in the paragraph is obscure at best. But once again, the claim it is attacking (the claim in the quotation) does not represent Ockham's view. Ockham emphatically denied that 'man' signifies an intention in the soul. For him, as we have seen, subordination is not signification.[71] The term 'man' is subordinated to the concept or intention "man," but it signifies individual human beings. The theory Burley's argument is directed against here appears to be, not Ockham's, but more the theory of Aristotle, Boethius, Scotus (in some passages) and Buridan — the theory that originated in the notion of language as a vehicle for communicating thought. Burley and Ockham are in agreement here[72]: the word 'man' does not, strictly, signify the concept "man."

The other objections in this part of Burley's *Purity* (Ch. 3, §§ 27–44) are based on the notion of a "second substance," which comes out of Aristotle's *Categories*, 5.[73]

E. Epistemological Factors in the Dispute

The dispute between Ockham and Burley was in part a dispute between realism and nominalism. But there was something else going on as well. The dis-

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[71] See Ch. 3, p. 79, above.

[72] See Figure 10, on p. 143 above.

[73] For Ockham's views on these matters, see *Summa logicae* I.42, and Moody's *The Logic of William of Ockham*, Ch. 4 § 2. I cannot in good conscience call Ockham's remarks in I.42 his "response" to Burley's objections, since the *Summa logicae* appears to antedate Burley's longer version of *On the Purity of the Art of Logic*. Still, if Burley knew what Ockham had already said, then what was his purpose in raising arguments that had already been answered? You begin to see why the question of the relative chronology of these two works is so difficult.

pute reflects a change in epistemological theory that was taking place in the early-fourteenth century.

In the Aristotelian tradition of epistemology, including the Muslim transmitters and commentators on Aristotle, knowledge is a pretty exalted thing. Just as for Plato, knowledge in this Aristotelian tradition can only be about what is necessary. As a result, there could be no knowledge, in the fullest sense of the term, about contingent particulars. Real knowledge, then, could only be had about universals.[74] This was strongly brought out in Aristotle's own *Posterior Analytics*, and was continued through people like Aquinas and many others.

The basic theme in this epistemological tradition was sometimes formulated in the slogan: "Understanding is of universals, but sensation is of particulars" (*Intellectus est universalium, sensus autem particularium*).[75] The idea was that the understanding (= the intellect) took sense impressions, which report on particular sensible objects, did something to them (just what it did was of course the hard question), and somehow abstracted the universal nature, which it then knew in an intellectual way.

This quite traditional theory is reflected in the semantical claim by William of Sherwood (Texts **(27)–(28)**), Peter of Spain (Text **(21)**), Walter Burley (*Purity,* §§ 33–34) and others that what is signified — and so what is understood when we hear the term (since signifying is just "establishing an understanding") — is a universal.

But in the generation or so after Aquinas, around the time of Duns Scotus, people began to move away from this theory, and to worry about the obvious fact that we do have some kind of intellectual knowledge of individuals, not just a sensory knowledge of them. It may not be so exalted a knowledge as the full-fledged "science" that the *Posterior Analytics* was talking about, but it was not just mere opinion, and it was certainly more than just sensation.[76]

This new concern is reflected in Ockham and Buridan: What we think of in the end when we hear the spoken term 'man' is nothing but individuals.[77] In their view, individuals are quite legitimate objects of intellectual knowledge.

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[74] Yes, I know, the move from necessity to universality is subject to criticism. Just bear with me.

[75] See Day, *Intuitive Cognition*, e.g., p. 4. (The whole of Day's discussion is relevant.) I hesitate to recommend this book very highly, since it is extremely polemical and indicative of the kind of partisan sniping that went on earlier in this century among some mediaevalists with particular axes to grind. Still, the book is a useful and informative one for the reader who is able to abstract from all that. For a more recent discussion, see Boler, "Intuitive and Abstractive Cognition."

[76] It is probably best not to think of this development as a rejection of the Aristotelian theory (although some authors, such as Ockham, did reject it) so much as an emergence of a new interest. It would be perfectly possible to say, for example, that Aristotle was completely right about the very special kind of "scientific" knowledge he was concerned with and still maintain that there is also a lesser kind of intellectual knowledge that Aristotle was simply not talking about. As a terminological matter, the term 'science' was reserved for the exalted kind of knowledge Aristotle was discussing, while 'cognition' was used more generally to include the "lesser" intellectual knowledge of particulars too.

[77] I say 'in the end' because we are here talking about ultimate signification.

They had better be, because on their nominalist ontologies there is simply nothing else to know.

F. Additional Reading

For additional reading on the material covered in this chapter, see: Spade, "The Signification of Terms," "Some Epistemological Implications"; Marilyn McCord Adams, "Ockham's Nominalism and Unreal Entities," "Ockham's Theory of Natural Signification."

Chapter 6: The Signification of Propositions

e've talked about the signification of terms, in Ch. 5 above. But what if anything do propositions signify? What sort of ontological correlate is out there in reality that we are made to think of by, for example, the proposition 'Socrates is wise'? That is what I want to talk about in the present chapter. As you might expect, there were a number of quite different views on the topic.

A. The Additive Principle

Let us begin with Buridan. Here is what he has to say about the matter (Text **(68)**)[1]:

> … everything that is signified by the terms, or by some [one] term, of a proposition is signified by that proposition [itself]. Indeed, the proposition is not imposed to signify as a whole [taken] together in addition to its terms, which the intellect puts together affirmatively or negatively as it wishes.

In the late Middle Ages, there was a dispute about the signification of propositions. Do they signify anything over and above the "things" — that is, the substances and accidents in the usual Aristotelian categories — signified by their component terms? For example, do they signify a "state of affairs," a "fact," a "proposition" in the modern sense of the term?

Buridan in the above passage says no, and Ockham would agree with him. There is simply nothing like "states of affairs," "facts," "propositions" (in the modern sense) in their ontologies, and so of course they can't be signified, by propositions or by anything else.

Ockham not only denied the existence of universals (which is what, properly speaking, makes him a nominalist[2]). He went further and denied the existence

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[1] Note that Buridan also has an entirely different view, which will be discussed later in this chapter. It is not clear how the two views are to be reconciled.

of anything at all besides substances and their qualities.[3] (Quality, of course, is only one of the nine Aristotelian categories of accident.) And since there are no universals for Ockham, this means his ontology is restricted to individual substances and their individual qualities. This reduction of the Aristotelian categories to two is altogether independent of the denial of universals; either claim could be maintained without the other. The two principles are both motivated, to be sure, by the same kind of methodological principle of parsimony.[4] But of course everyone agreed about the desirability of being theoretically parsimonious; what they *disagreed* about was what kinds of entities you could do without in your ontology.

Ockham and Buridan thought you could do without quite a bit. For Ockham, you need only individual substances and their individual qualities. This means that individual substances and qualities are going to be the significates of propositions just as much as they are of terms. There is simply nothing else that can serve as the significates of propositions for Ockham.[5]

Buridan's ontology is a bit richer,[6] but still, as we have just heard him say in Text **(68)**, propositions signify exactly what their constituent terms signify, nothing more.

Thus we have the following principle, explicit in Buridan and implicit but definitely required by Ockham: *A proposition signifies just exactly the sum total of what its categorematic terms signify*.

For future reference, let's agree to call this *"The Additive Principle."*

When you think about it, the positive part of this claim is quite plausible.[7] Consider the proposition 'The cat is on the mat'. There are two categorematic

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[2] At least in the sense of the term I am using throughout this book. Nominalism is many things for modern-day readers: the rejection of universals, the rejection of "abstract entities" in general (whatever they are), and so on. And there is growing evidence that the original meaning of the term (in the twelfth century) had nothing whatever to do with universals. On this surprising fact, see Normore, "The Tradition of Mediaeval Nominalism," and Courtenay, "*Nominales* and Nominalism in the Twelfth Century."

[3] The nature of this denial needs to be understood properly. For some discussion, see Spade, "Ockham, Adams and Connotation," especially pp. 606–608. There I present an argument that Ockham's ontology is not as "reductionist" as it claims to be — it allows all the sorts of ontological features dealt with in Aristotle's list of categories; it just doesn't allow us to refer to all those ontological features by means of nominal expressions (names and adjectives). Those that *can* be referred to in this way are exactly (individual) substances and their (individual) qualities. I now think the situation is the other way around, that Ockham never claimed his theory to be any more "reductionist" than this, and that the view that he did is a modern distortion of Ockham's theory — a distortion for which I accept some (but by no means all) responsibility. My remarks in this chapter about Ockham's restricting his ontology to substances and qualities should be understood in this light.

[4] Sometimes called "Ockham's Razor," although there is nothing unique to Ockham about it.

[5] The link between this claim and n. 3 above is made by the fact that for Ockham anything that can be signified can be referred to, in what we will learn (Ch. 8) to call "personal supposition."

[6] See Normore, "Buridan's Ontology."

terms in it: 'cat' and 'mat'; the rest are syncategorematic. When I hear that proposition spoken, I hear the term 'cat', and that term signifies — makes me think of — all cats ("confusedly," as Ockham puts it). I also hear the term 'mat', and that term signifies — makes me think of — all mats.

And that's all there is to it, at least for Ockham and Buridan. What the proposition as a whole makes me think of is just all cats and all mats. There are no "states of affairs," no "propositions" (in the modern sense), no "facts" it could make us think of.

Notice how this Additive Principle violates what Robert Fland said in Text **(74)**.[8] Recall how Fland there said that the propositions 'You are an ass' and 'You are a nanny goat' could signify just what you expect them to, but their conjunction 'You are an ass *and* you are a nanny goat' might still signify that God exists, and so be true. Here we have a proposition's as a whole getting an imposition over and above the impositions of its constituent parts.

Buridan is in effect ruling out this kind of thing by his Additive Principle. For him, it is the primitive vocabulary of a conventional language that is "imposed to signify." The primitive categorematic terms are subordinated to concepts, and the primitive syncategoremata are subordinated to various kinds of mental syncategoremata that in effect determine truth conditions for the conventional language. And that's all you need. Given that, you don't need any additional imposition for the propositions. Their semantic roles are determined by their components. As Buridan says (Text **(68)**):

> … the proposition is not imposed to signify as a whole [taken] together in addition to its terms …

Fland's point, you will recall, was to emphasize the radical conventionality of spoken and written language. Buridan's doctrine thus amounts to a restriction on that view — perhaps not a restriction in principle, but certainly a restriction in practice. We do not in fact give separate impositions to propositions over and above the impositions of their parts.

As I pointed out in Ch. 4,[9] if you pushed Buridan (and others) on this point, they would probably reply that, yes, you could set up your impositions in the way Fland describes if you wanted to. But, since that would be a very eccentric way to do it, we won't discuss the possibility any further. As a result, Buridan and the others who take this approach do not really have any general theory of the signification of propositions to apply to such cases.

Note something else about that Fland passage in Text **(74)**. He said there that the proposition 'You are an ass *and* you are a nanny goat' might signify *that God exists*. But what kind of a thing is *that God exists*, the significate of this

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[7] That is, the claim that a proposition does make us think of what its categorematic terms signify. The other part of The Additive Principle, the claim that a proposition does not make us think of anything further, you may or may not find so plausible. That's what the present chapter is about.

[8] See Ch. 4, p. 91, above.

[9] See Ch. 4, pp. 92–93, above.

proposition? It certainly doesn't seem to be a substance or a quality — or indeed any other kind of Aristotelian accident. But what else can it be?

B. *Complexe significabilia*

This question brings us to another, and quite distinct, theory of the signification of propositions, the theory of *"complexe significabilia"* or "complexly significables."[10] This theory is perhaps the closest the later Middle Ages came to the present-day notion of a "proposition" — that is, of a bearer of truth value, an entity that is not a sentence or statement (not even a sentence or statement in mental language), but rather what is expressed by such sentences or statements.[11]

Historically, the doctrine of *complexe significabilia* has been mainly associated with Gregory of Rimini, who was one of those who held the theory.[12] This is true not only in the modern secondary literature, but in the Middle Ages as well. Peter of Ailly, for example, plainly had Gregory of Rimini in mind (and liberally quoted from him) in his discussion and rejection of the view.[13]

Nevertheless, Gregory did not make up the theory for himself. He in turn took it from one Adam Wodeham (ca. 1298–1358), an Englishman who is reputed to have been Ockham's personal secretary for a while.[14] Wodeham was an important thinker in his own right, and by no means simply a camp-follower of Ockham — as evidenced by his adoption of the theory of *complexe significabilia*. It turns

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[10] It is important to realize that this theory does not involve any radically new, alternative notion of signification. Everything we have said so far about signification still holds; it is still the same psychologico-epistemological relation it always was. It is just that the proponents of the theory we are about to discuss think the psychological and epistemological facts about language are not exhausted by what we have said so far.

[11] There were antecedents, however. See Tweedale, *Abailard on Universals*, Ch. 5; Nuchelmans, *Theories of the Proposition* (an outstanding book on this whole topic), and Kretzmann, "Medieval Logicians on the Meaning of the *Propositio*."

[12] See, for example, Elie, *Le Complexe significabile*, especially Ch. 2. Terminological note: The correct translation of *'complexe significabile'* (plural = *'complexe significabilia'*) is 'complexly significable' — that is to say, something that can be signified in a complex way (by a complex linguistic expression). Nevertheless, some modern scholars translate it as 'complex significable', which is wrong. (For example, Scott's introduction to his translation of Buridan, *Sophisms on Meaning and Truth*, p. 16.) *'Complexe'* is an adverb and not a neuter adjective, which would be *'complexum'*. The nuance makes some difference, since to call this peculiar entity a "complex significabile" suggests that not only can it be signified by a complex linguistic expression, but it itself is also complex in its metaphysical make-up. The adverbial form avoids this suggestion. (Nevertheless, some late mediaeval and post-mediaeval authors did use the adjectival form with all its suggestion of internal metaphysical complexity.) I suspect the confusion over the correct translation of this term stems from a careless reading of the title of Elie's classic book on the topic. Apart from the article *'le',* Elie's title is in Latin, not French. In other words, I suspect the error arose from reading *'Le Complexe significabile'* (note the penultimate 'i') as *'Le Complexe significable'* (without the 'i'). But this is a purely speculative hypothesis on my part. On Gregory of Rimini, see Ch. 2, n. 118, above and the references there.

[13] See Peter of Ailly, *Conceptus et insolubilia*, fols. 12^{vb}–13^{ra}; Spade trans., §§ 179–189 (pp. 54–56). Peter wrote in 1372. See Ch. 2, p. 48, above.

[14] See the Prologue by "Adam of England" to Ockham's *Summa of Logic.*

out that Wodeham was one of the most important conduits through which English thought in the early-fourteenth century was transmitted to France. His writings have only recently begun to be available in part in reliable Latin editions.[15]

There are several ways to approach the theory of *complexe significabilia*. As is customary with mediaeval authors, we can cite both authorities and rational arguments in favor of the view. Let us begin with the authorities.[16]

1. Authoritative Sources for the Theory

a. Boethius

An important text in this respect is Boethius' definition of a proposition, from his *On the Differences in the Topics* (Text **(16)**):

A proposition is an expression signifying the true or the false.

By 'the true or the false' Boethius certainly doesn't mean anything like Frege's "True" or "False," which are special entities, the one denoted by all true propositions and the other by all false ones. Rather, as often happens in Latin, we have here neuter adjectives playing the role of nouns. Hence Boethius' famous definition amounts to saying that a proposition signifies "something true" or "something false."

For present purposes, the important thing about this text is the suggestion that it is not so much the proposition itself that is true or false, except perhaps in a derivative way, but rather something signified by the proposition. And what could that be? Plainly not the sorts of things Ockham and Buridan say propositions signify (namely, individual substances and their individual accidents), since those aren't the kinds of things that can be said to be true or false; Socrates, for example, is not true or false, and neither is his snub-nosiness or his Greekness. Or at least so it would seem. Hence, on the authority of Boethius, there must be some other kind of entity to serve as the primary bearer of truth value. Propositions have a truth value only in a secondary sense, insofar as they signify those primary bearers, whatever the latter turn out to be.

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[15] For the most complete study of Wodeham and his influence, see Courtenay, *Adam Wodeham*. Gedeon Gál was the one who established beyond doubt that Gregory of Rimini's version of the theory of *complexe significabilia* was lifted directly from Wodeham. See Gál, "Adam of Wodeham's Question." On Wodeham's version of the theory, see also Nuchelmans, "Adam Wodeham on the Meaning of Declarative Sentences." The text of Wodeham on which all this is based was first edited in a preliminary way in Gál, "Adam of Wodeham's Question," and then critically edited in Adam Wodeham, *Adam de Wodeham Lectura secunda*, d. 1, q. 1.

[16] Some people find it amusing to ridicule mediaeval philosophers for relying so much on "authorities," as though they were afraid to think for themselves. But typically, as in the present case, where one finds appeals to authority one finds real theoretical arguments in addition. Unfortunately, the same cannot always be said about authors in the late-twentieth century who, while criticizing the mediaevals, do not themselves hesitate to appeal to the authority of Wittgenstein or Heidegger, Quine or Derrida.

b. Aristotle

Another important textual source for the theory of *complexe significabilia* comes from Aristotle's *Categories* 10 (Text **(2)**):

> Neither is what grounds negation and affirmation [itself] negation and affirmation. For an affirmation is an affirmative proposition, and a negation is a negative proposition. But none of what ground negation and affirmation is a proposition. These [grounds] are nevertheless said to be opposed to one another as affirmation and negation are. For it is the same kind of opposition in these cases too. For just as affirmation is opposed to negation — for example, 'He is sitting' [is opposed] to 'He is not sitting' — so too the thing underlying each one is opposed [to the thing underlying the other], sitting [is opposed] to not sitting.

Once again, the suggestion is that there is something more expressed by a proposition than the sum total of substances and accidents signified by its categorematic terms, as Ockham and Buridan would have it — something more that can enter into relations of "opposition" in a way that substances and accidents do not. In short, there must be entities like "facts," "states of affairs," "proposition" in the modern sense.

2. Arguments for the Theory

Let's now turn to the reasons (as distinct from the authorities) for the theory of *complexe significabilia*.

Here is one, taken from Peter of Ailly's discussion.[17] Consider any affirmative singular proposition[18] — for example, 'Socrates is sitting'.

Now I will give you a little advance peek at supposition-theory. An affirmative, singular proposition like 'Socrates is sitting' is true if and only if the subject term stands for (supposits for) something the predicate term stands for (supposits for) too. That is, it is true if and only if there is something of which the subject term can be truly affirmed and of which the predicate term can be truly affirmed as well. Thus, 'Socrates is sitting' is true if and only if there is something of which it is true to say 'This is Socrates' and of which it is also true to say 'This is sitting'. (And of course if the proposition is true, then that something will be Socrates the person, who happens to be sitting at the time.)

This illustrates a general feature of affirmative propositions (singular or otherwise): their truth requires that there be something of which the subject term can be truly affirmed[19] and of which the predicate term can be truly affirmed too.

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[17] Peter of Ailly, *Conceptus et insolubilia*, fol. 12va; Spade trans., § 179 (p. 54). Don't forget, Peter rejected the theory. But first he had to discuss why other people believed in it.

[18] Recall that a "singular" proposition is just a categorical proposition with a singular term in subject position. See Ch. 2, p. 14, above.

Keeping that general feature in mind, consider the proposition:

> The proposition 'Every man is an animal' signifies *every man to be an animal*.

The English phrase 'every man to be an animal' translates the Latin accusative-plus-infinitive construction *'omnem hominem esse animal'*. This kind of construction is used regularly in Latin indirect discourse, and is perfectly straightforward Latin. We also have it (albeit vestigially) in English, as we can see in cases where the nominative and accusative forms differ — which only happens in English with personal pronouns: 'They thought *him to be king*', 'I told *them to go*', and so on. The construction is perhaps a little fancy and old-fashioned in some contexts (for instance, the former of the two examples), but we do have it.[20] In Latin this accusative-plus-infinitive construction is sometimes called a *"dictum"* in the Middle Ages,[21] so that we can speak of a *"dictum"* corresponding to a certain proposition. Thus, 'him to be king' is the *dictum* going with 'He is king', and so on.

In present-day English, it is often more natural to use a 'that'-clause: 'They thought *that* he was king'. You can do this in mediaeval Latin too, with a *'quod'*-clause, as in the Latin translation of the proposition just given: *'Putabant quod erat rex'*. The *'quod'*-construction had become quite acceptable in the fourteenth century. For our purposes, the two constructions (the accusative-plus-infinitive construction and the *'quod'*-clause) are to be viewed as strictly on a par. Both are nominalizations of propositions.

Now, with all that in mind, what about that proposition:

> The proposition 'Every man is an animal' signifies *every man to be an animal*?

This is supposed to be a true proposition, making a claim that we all readily accept pre-theoretically about the signification of the proposition 'Every man is an animal'. The argument we are now considering starts from the non-controversial fact that this is a true proposition.

Note that in this proposition, the verb 'signifies' is in the active voice. Hence, by a simple syntactical transformation, we ought to be able to infer the corresponding passive proposition:

> Every man to be an animal is signified by the proposition 'Every man is an animal'.

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[19] See, for example, Texts **(65)–(66)**, from Buridan.

[20] Sometimes in modern English it is much more natural to use a 'for'-construction: 'It is necessary *for every man to be animal*'. I shall use whichever construction seems the least awkward in any given case.

[21] But be careful. Sometimes too the word *'dictum'* refers to what is *expressed* by such a construction. See Kretzmann, "Medieval Logicians on the Meaning of the *Propositio*." But this doesn't happen very often in the period we are studying in this book, when *'dictum'* meant a piece of language, not a piece of the world.

Since the former proposition is true, this latter one ought to be true too. Now if you look at this passive-voice proposition, you will see that it is a singular affirmative proposition, with a *dictum* as the subject term,[22] then a copula, and finally the rather complex predicate 'is signified by "Every man is an animal"'.

Using the general rule I just gave you[23] about the truth conditions for such propositions, it follows that there is something of which the subject term (the *dictum*) in that proposition can be truly affirmed (and also of which the predicate term can be truly affirmed, but that doesn't matter for now). That is, there is something we can point to and truly say 'This is *every man to be an animal*' (or, more colloquially, 'This is what it is *for every man to be animal*').

But what kind of thing can that be? Certainly not any individual man, since you can't point to Socrates, for example, and truly say "He is *every man to be an animal.*" So too for any other human being, and for any other substance or accident in the normal Aristotelian ontology. Hence we need to postulate some new and special kind of entity, outside the Aristotelian categories. And this is what came to be called a *complexe significabile*, something that can be signified by a complex linguistic expression.[24]

3. Terminological Variations

These *complexe significabilia* were also sometimes called the "total" or "whole significates" of propositions.[25] That is, everyone recognized that propositions signify substances and accidents, as Buridan says in his Additive Principle, in virtue of their having significant categorematic terms in them. But those who believed in *complexe significabilia* argued (we have just seen one of those arguments) that a proposition as a whole signifies something else too, namely its "whole" or "total" significate. And that is just the *complexe significabile* under another name.

Sometimes too the term 'adequate significate' was used for this same entity.[26] 'Adequate' here does not mean "enough," as it often does in colloquial English. Instead, it is here used in its etymological sense (*ad* + *aequatus* = made

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[22] I don't know of any actual argument in the Middle Ages that *dicta* are singular terms. It just seems to have been taken for granted. But it's not an especially controversial point. Would *you* know what to do with a theory claiming that at one and the same time, for example, there were two distinct "facts" that every man is an animal?

[23] See p. 170 above.

[24] Of course it is implicitly understood here that we are only really interested in complex expressions of certain kinds: propositions and their corresponding nominalizations. Expressions like 'red rose' or 'the day before yesterday' are complex too, but they are not what we are talking about now.

[25] See, for example, Peter of Ailly, *Conceptus et insolubilia*, fol. 12va; Spade trans., § 179 (p. 54). Note: 'Total' and 'whole' are simply alternative translations for the same Latin word, *'totale'*; there is no distinction in the Latin.

[26] *Ibid*.

equal to), to mean the significate that "exactly fits" the proposition, as distinct from the significates of its constituent terms.[27]

These *complexe significabilia*, these "whole" or "total" or "adequate" significates of propositions are the bearers of truth and falsehood. They are what Aristotle was talking about in *Categories* 10 (Text **(2)**), and Boethius in *On the Differences in the Topics* (Text **(16)**). At least this is so for those who believed the theory.

4. The Ontological Status of *Complexe significabilia*

a. The Problem

As we have seen, these *complexe significabilia* do not seem to fit into the usual Aristotelian scheme of the categories. Insofar then as the categories were intended to exhaust the kinds of realities there are, the "ontological status" of *complexe significabilia* turns out to be something of a problem.[28] On the one hand, they must be real; we have just seen an argument why in the preceding section. On the other hand, they don't seem to have any place in the recognized scheme of realities — namely, the categories. What are we going to do about that?

But, apart from the traditional classification derived from Aristotle's *Categories*, there was another reason too for wondering about the ontological status of *complexe significabilia*. It was a theological reason, so you may or may not find it persuasive, depending on what you think about such things. In any case, here it is[29]:

Even though we have seen what appears to be a perfectly good argument why there must really be *complexe significabilia*, it seems on the other hand that they cannot be real. For consider the theological doctrine of creation. Before creation, that doctrine goes, there was nothing real besides God.[30] Nevertheless, be-

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[27] These terminological points are all subject to variation from author to author. Maierù, *Terminologia logica*, is an invaluable source of information on such matters.

[28] There was considerable dispute in the Middle Ages about whether Aristotle's *Categories* was meant as a classification of terms or as a classification of entities. (See Ch. 2, p. 11, above.) But that doesn't affect the present point. Even those who took the work to be about terms recognized that there was a sense in which familiar entities can all be said to "belong" to one or another of the categories.

[29] I am taking this from Peter of Ailly's discussion in *Conceptus et insolubilia*, fol. 12va; Spade trans., § 181 (p. 54).

[30] One principal part of the doctrine of creation, as understood in the Middle Ages, is that God "created" — causally produced — absolutely everything besides himself. This feature of the doctrine is part of what distinguishes it from the Platonic theory of the Demiurge, whose work looks a little like creation insofar as the Demiurge arranges the cosmos. But the Demiurge works by putting order into a pre-existing "receptacle" (later interpreted as matter), so that he does not produce absolutely everything besides himself. Note that, insofar as time itself was often regarded as a result of creation, talk about what was and what was not so "before" creation may seem prob-

fore creation it was true *that the world was going to be* (= *mundum fore*). So there was at least this truth, this *complexe significabile,* before creation. That *complexe significabile* cannot have been identical with God himself, since God is a necessary being but the *complexe significabile* was contingent.[31] Therefore, it was distinct from God. Here then we have a *complexe significabile,* distinct from God, that has to be both **(1)** real, since it has a semantic role to play,[32] and yet **(2)** unreal on pain of violating the doctrine of creation. And that, gentle reader, is what we call a problem.

b. Gregory of Rimini's Three Kinds of Beings

In discussing possible responses to this problem, Peter of Ailly cites Gregory of Rimini as having distinguished three different senses of words like 'thing', 'something', 'being', 'real', etc.[33]

> **(1)** In the first and broadest sense, anything that can be signified, complexly or incomplexly, truly or falsely, can be called a "being."[34] In this sense, tables and chairs are beings, as are the complexly significables *every man to be an animal*, which is a true one, and *every man to be an ass*, which is a false one.
>
> **(2)** In a second and narrower sense, "beings" include anything that can be signified by a true proposition — that is, either by the proposition as a whole (the "being" in that case would be the true *complexe significabile*) or by any of the categorematic terms in that proposition (substances and accidents in the familiar Aristotelian categories). In this sense, false complexly significables aren't beings.

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lematic. Mediaeval authors were quite aware of this problem and had various things to say about it, but I don't want to digress on it here.

[31] That the world was going to be was a contingent fact, since God's creative act was a free one. The contingency of creation is a second principal ingredient of the doctrine of creation. God not only didn't have to create exactly the things he did, or in exactly the way he did; he didn't have to create at all!

[32] Just as in the argument on pp. 170–172 above, so too here. The proposition '*For the world to be going to be* was a truth (before creation)' is a singular true proposition, so that its subject term (the *dictum*) needs some real entity to be truly predicable of. The only difference between this case and the previous one is that this time the proposition is in the past tense. As we shall see in Ch. 10, when we talk about modal and tense logic, the only difference this makes is that the entity corresponding to the *dictum* is moved into the past — and in particular, moved back into the past before creation.

[33] Peter of Ailly, *Conceptus et insolubilia*, fol. 12$^{va–b}$; Spade trans., § 185–188 (pp. 55–56). See Gregory, *Super primum et secundum Sententiarum* I, Prol. q. 1, fols. 1Q–2B (= Trapp ed., vol. 1, pp. 8.25–9.20). Gregory had introduced this threefold distinction in response to a different argument.

[34] Or a "thing," or "real," etc. I won't keep adding these alternatives henceforth.

(3) In a third and narrowest sense, only "some essence or existing entity" can be called a "being." This appears to mean an entity in the Aristotelian categories.

Corresponding to the three senses of 'being', there are three senses of 'nothing'. Thus, if you ask "Are *complexe significabilia* something or are they nothing — make up your mind, Gregory," he will say that all of them are things or realities or "somethings" in sense **(1)**, the true ones are things or realities or "somethings" in sense **(2)** but the false ones are nothing in that sense, and that none of them is a thing or reality or "something" in sense **(3)** — they are all nothing in that sense. In short, *complexe significabilia* do have some kind of ontological status, but they are not real in the same way tables and chairs are.

Well now! All that's very nice, but of course it really doesn't answer the question Peter asked, does it? In order to make it answer that question, one would have to add the claim that the doctrine of creation holds that God created absolutely "everything" besides himself only in sense **(3)** of 'everything', and that in senses **(1)** and **(2)** there are uncreated realities distinct from God. And that, I suspect, would have been regarded as an unacceptable diluting of the doctrine of creation.

In any case, it is not clear how serious the theological objection was to begin with. Peter of Ailly rejects it on the grounds that it involves an illegitimate substitution of identicals in an opaque modal context.[35]

However all that turns out, it is apparent that defenders of *complexe significabilia* took them to have a special kind of reality, quite unlike the reality of things falling under the various Aristotelian categories.

C. Buridan's Theory

Many authors rejected the theory of *complexe significabilia.* I've already told you Peter of Ailly did.[36] In effect, Peter denied that the active/passive transformation in our earlier argument[37] is permissible; one cannot validly argue from the active 'The proposition 'Every man is an animal' signifies every man to be an

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[35] Peter of Ailly, *Conceptus et insolubilia*, fol. 14va; Spade trans., § 231 (p. 62). Peter argues in effect that before creation *for the world to be going to be* was indeed a necessary being, and was in fact identical with God. It was a necessary being; it just wasn't necessarily true. From 'Necessarily *A* exists' and '*A* is identical with *B*', it does not follow that necessarily *B* exists, since *A* might be only contingently identical with *B*. (Similarly, to take a standard example, it is necessary for nine to be greater than seven. But the number of planets is nine — or at least it was until recent recounts that we'll conveniently ignore for the sake of the example. Yet it does not follow that it is necessary for the number of planets to be greater than nine; there might have been any number of planets.) But Peter's argument is richer than this trivial little observation would indicate. See *Conceptus et insolubilia*, fol. 14^{vb}; Spade trans., §§ 233–234 (pp. 62–63). And remember, Peter is not defending the theory of *complexe significabilia,* since he rejects it. It's just that the theory can't be refuted by appealing to a fallacious substitution argument.

[36] See p. 168 above.

[37] See p. 171 above.

animal' to the passive 'For every man to be an animal is signified by the proposition "Every man is an animal"'. The former is true, but the latter, in Peter's view, is simply ill-formed.[38] We'll see why later.

Buridan too rejected Gregory's theory, but for entirely different reasons.[39] Where Peter of Ailly does not always allow the active/passive transformation, Buridan does allow it. Hence, unlike Peter, Buridan is willing to say that '*For every man to be an animal* is signified by the proposition "Every man is an animal"' is not only well-formed but true.

As a result, Buridan must find a candidate among the individual substances and accidents of his ontology to serve as the *suppositum* (= roughly, the referent) of the *dictum 'for every man to be an animal'*. That is, he must find an individual substance or accident of which that *dictum* can be truly affirmed. And in general, for any affirmative proposition in which the subject is a *dictum*, if the proposition is true there must be some substance or accident of which the *dictum* can be truly affirmed.

The implausibility of this, as we saw,[40] was one of the motives behind the theory of *complexe significabilia* in the first place. But Buridan, who is not willing to accept *complexe significabilia*, just bites the bullet. Here is how it goes[41]:

If Socrates is sitting, then on Buridan's theory the *dictum* 'for Socrates to be sitting' can be truly affirmed of Socrates. That is, the proposition 'This is for Socrates to be sitting' (or more colloquially, 'This is what it is for Socrates to be sitting') is true, pointing to Socrates. On the other hand, if Socrates is not sitting, then that *dictum* cannot be truly affirmed of anything at all.[42]

Or, to put it another way:

> **(1)** If 'Socrates is sitting' is true, then Socrates is sitting, and in that case *for Socrates to be sitting* is identical with Socrates.

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[38] Peter of Ailly, *Conceptus et insolubilia*, fol. 13^{vb}; Spade trans., § 212 (p. 59).

[39] See Texts **(65)–(69)**. Note: Scott translates *dicta* — that is, accusative + infinitive constructions — in a very peculiar way. Thus *'hominem esse animal'* (= 'man to be an animal' or 'for a man to be an animal') gets translated as 'man-being-animal' (with the hyphens). In his translation (p. 87, n. 8), he justifies this by saying "I have translated these phrases as gerundive, even though this leaves them awkward at times, because it is less inelegant than an infinitive translation." Elegance is perhaps in the eye of the beholder, but for me 'man-being-animal' is about as inelegant as you can get, and far more awkward than the straightforward 'for a man to be an animal'. The 'for' cannot always be included in the English (thus 'I told him to go', but not 'I told for him to go'), so *dicta* cannot in all contexts be uniformly translated in this way. But this sort of thing can be handled by an explanatory footnote the first time it occurs. Besides, Scott's form of translation is not "gerundive" but "gerundial." (The "gerundive" is the future passive participle.)

[40] See p. 172 above.

[41] See Texts **(66)–(69)**.

[42] Buridan uses this same treatment of *dicta* in his *Sophismata*, Ch. 4, sophisms 9–14 (Scott ed., pp. 72–83; Scott trans., pp. 126–137), in his discussion of epistemically opaque contexts. See Geach, "A Medieval Discussion of Intentionality"; Moody, "Buridan and a Dilemma of Nominalism"; and the introduction to Scott's translation of Buridan's *Sophismata*, pp. 44–49.

(2) If 'Socrates is sitting' is false, then Socrates is not sitting, and in that case *for Socrates to be sitting* is not identical with Socrates, and not identical with anything else either; there is simply no such thing in that case.

Although Buridan (Text **(67)**) cites some texts from Aristotle to support this view, the theory strikes me as not very plausible. Buridan has to find a substance or accident of which the *dictum* can be truly affirmed, and so (it seems to me) he finds one by *fiat*. But you can decide that for yourself.

1. Problems for Buridan's Theory

a. One Problem

Before you decide, however, consider the following problems. First, the theory may work (although I don't personally find it very persuasive) for *dicta* of singular propositions: *for Socrates to be* sitting, *for Socrates to be* standing, etc. And perhaps likewise it will work for *dicta* of indefinite and particularly quantified propositions as well.[43] But what are we going to say about universally quantified propositions? For example, 'Every man is running'. Supposing the proposition is true, what can its *dictum 'for every man to be running'* be truly affirmed of? If we say it can be truly affirmed of *every* man, then in particular Socrates is *for every man to be running*, and so is Plato, etc. Each of them individually is *for every man to be running*. Or should we say instead that if every man is running, then all men taken somehow together or collectively are what the *dictum 'for every man to be running'* can be truly affirmed of?[44] Buridan just doesn't say.

b. A Possible Second Problem

Perhaps there is a second problem lurking in the following observations. Earlier,[45] I said that the proposition

(a) 'Socrates is sitting' signifies *Socrates to be sitting*.

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[43] Thus if 'A man is running' or 'Some man is running' is true, then the *dictum 'for a (some) man to be running'* will have individual men — namely, the running ones — as its referents. (In that case, of course, the *dictum* is not a singular term.) I'm not recommending this, mind you, but it might work.

[44] For present-day readers, it is perhaps tempting to say that what the *dictum* can be affirmed of is the *class* of all men. Maybe, although "class"-talk is not mediaeval but modern. There was nothing like the modern notion of a class or set, as distinct from a mereological whole, in the Middle Ages. Perhaps then the mereological sum of all men will serve as the referent of the *dictum*. The problem is that Buridan simply gives us no clue how to proceed here.

[45] See p. 171 above. I used a different example there, but the point is the same.

seems, on the face of it, to be true. From that, it seemed, we could infer the corresponding passive form:

> **(b)** *For Socrates to be sitting* is signified by 'Socrates is sitting'.

Peter of Ailly rejected this active/passive inference, but Buridan allowed it. On the other hand, according to Buridan's theory, if Socrates is not in fact sitting, then the *dictum 'for Socrates to be sitting'* doesn't refer to anything at all. In that case, since **(b)** is an affirmative the subject of which cannot be truly affirmed of anything, **(b)** is false.[46]

That much is straightforward. The problem arises because Buridan accepts the inference from **(a)** to **(b)**. Hence, if Socrates is not running, not only is **(b)** false, so is **(a)**. But **(a)**, we said, seemed to be true. Furthermore, it seemed to be true quite independently of whether Socrates happens to be running or not. Buridan's theory thus has the odd result that a proposition's signification changes if the proposition itself changes its truth value.

On the other hand, perhaps this objection is not really all that damaging. It might be based on what amounts to nothing more than confusing signification with meaning.[47]

D. Digression on the Bearers of Truth Value

Part of the textual basis for the theory of *complexe significabilia* was Boethius' remark (Text **(16)**) implying that propositions themselves are not the bearers of truth or falsehood, except in a derivative sense, and that the bearers of truth value are instead what the propositions signify. *Complexe significabilia* fulfilled that role.

Therefore Buridan, Peter of Ailly, and others who rejected the theory of *complexe significabilia* had to find some other bearers of truth and falsehood. In practice, most such authors took the propositions themselves (as distinct from their significates) as the bearers of truth value.[48]

For nominalists like Buridan and Ockham,[49] the bearers of truth value are propositions — that is, declarative sentences. And since they were nominalists, and so rejected any kind of metaphysically universal entities, this meant that they identified the bearers of truth value with sentence-*tokens* rather than sentence-*types*[50] — that is, with individual utterances or individual inscriptions (or individ-

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[46] See p. 170 above.

[47] On this, see Ch. 3, p. 63, above.

[48] They could then interpret Boethius' text in various forced ways to avoid contradicting his authority, as Peter of Ailly does in his *Conceptus et insolubilia*, fols. 7^{vb}–8^{ra}; Spade trans., § 98, p. 37.

[49] Ockham of course predated the theory of *complexe significabilia*. Nevertheless he, like Buridan, held the theory I am about to describe.

[50] If you are not familiar with this modern terminology, it is easy to explain by an example. 'Socrates is mortal' and 'Socrates is mortal' are said to be two "tokens" of the same "type."

ual judgments in mental language). As a result, for these authors, if you say 'All men are mortal' and I likewise say 'All men are mortal', we have uttered two truths, not one. Likewise, if you write the proposition 'All men are mortal' on a chalkboard, and I come along and erase it, I have destroyed a truth.

As a result of what we might call this "tokenality" of nominalist logic, you frequently see Ockham and others saying things like "such and such a proposition is true *if it is formed,*" or "such and such a proposition is false *if it exists.*"[51]

Truth and falsehood, therefore, belong only to existing sentence-tokens. Tokens that do not exist don't have truth values; they don't have anything.[52]

This view leads to a certain interesting problem. Buridan recognized it and discussed it in his *Sophismata*, Ch. 8, sophisms 1–2.[53] In capsule form, the problem is that the following three claims form an inconsistent triad:

(a) Sentence-tokens are the bearers of truth value.

(b) The usual "classically" valid inferences are valid, and the usual "classically" invalid ones are invalid.

(c) An inference is valid if and only if (to put it loosely) whenever the premises are true the conclusion is true too.[54]

For, here are two counterexamples. First, consider the inference:

> Every proposition is affirmative; therefore, no proposition is negative.

This is a classically valid inference, the kind of inference we want to be a valid one (in virtue of **(b)**). Yet it might well be the case that the premise of this inference is true — for example, if some cataclysm destroyed all other sentence-tokens but that one (or alternatively, if it destroyed all the negative ones). When it is true, however, the conclusion is not true — in fact, when it is true the conclusion doesn't even exist. Hence, given **(a)** and **(b)**, **(c)** fails for this inference. On the other hand, consider the inference:

> No proposition is negative; therefore, some proposition is negative.

This is the kind of inference we don't want to be valid. It argues from a proposition to its contradictory opposite, and that of course is not supposed to be valid unless the former proposition is impossible. But that isn't so here. On the contrary, it is quite possible for our hypothetical cataclysm to destroy all negative

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[51] See, for example, William of Ockham, *Summa logicae*, 2, 9, p. 375.72–84; translated in William of Ockham, *Ockham's Theory of Propositions*, p. 111.

[52] For Ockham, the same thing is true for modalities like necessity, impossibility, possibility, etc. See the references in n 51. For a discussion see Spade, "Les modalités aléthiques selon Ockham."

[53] Scott ed., pp. 123–127; Scott trans., pp. 180–185. Hughes, ed. & trans., pp. 38–49 (paperback trans., pp. 34–39).

[54] This is a quite standard way of describing validity even nowadays.

sentence-tokens. Nevertheless, the inference is valid according to the criterion in **(c)**. For the premise cannot be true; if it exists at all, it is false. The definition of validity in **(c)**, therefore, is trivially satisfied.

Note that you can't fix this problem by defining a valid inference negatively, as one that never leads from true premises to a false conclusion. For that would validate the undesirable inference:

> Every proposition is affirmative; therefore, no proposition is affirmative.

If our cataclysm this time made the premise true by destroying all negative sentence-tokens, then the conclusion would not exist at all, and so not be false.

Buridan saw these difficulties and touched up the notion of consequence to accommodate them. That is, he kept **(a)** and **(b)**, but revised **(c)**.[55]

E. The Adverbial Theory of Signification

There was yet another tradition of talking about the signification of propositions in the late Middle Ages. According to people in this tradition, if you ask *what* it is that a proposition signifies, the answer is given by The Additive Principle[56]: it signifies the sum total of whatever its categorematic terms signify. In this sense of signification, the truth or falsehood of a proposition cannot be determined by looking at its signification, on the one hand, and looking at the state of the world, on the other. For in this sense of signification, the proposition 'The cat is on the mat' has exactly the same signification as does the proposition 'The cat is *not* on the mat'. Both signify exactly the same things.

But, this tradition maintained, there is another kind of signification too, according to which the truth or falsehood of a proposition *can* be determined by looking at its signification and the state of the world. And this is what might be called the "adverbial" sense of signification. The idea is this:

If you ask *what* 'The cat is on the mat' signifies, the answer (in accordance with The Additive Principle) is that it signifies cats and mats. But if you ask, not *what*, but *how* the proposition signifies, the answer is that it signifies *that the cat is on the mat,* or *the cat to be on the mat,* etc.[57] All the expressions used in the theory of *complexe significabilia* reappear here: *dicta*, 'that'-clauses, and so on.

The difference between the theory we are talking about now and the ones we have looked at previously is that this new theory does not regard the expres-

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[55] See the references in n. 53 above. For a discussion of these issues, see Hughes' commentary in John Buridan, *John Buridan on Self-Reference*, pp. 141–149 (paperback, pp. 80–88), and Prior's elegant paper, "The Possibly-True and the Possible." For related issues, not necessarily involving Buridan, see Kretzmann, "Medieval Logicians on the Meaning of the *Propositio*," and Sullivan, "What Was True or False in the Old Logic?"

[56] See p. 166 above.

[57] At least it does unless there is some special imposition adopted for that proposition. See the discussion of Robert Fland in Ch. 4, pp. 90–93, above.

sions ‘that the cat is on the mat’, ‘for the cat to be on the mat’, etc., as names at all. They are not really nominalizations of the corresponding propositions, but are instead to be regarded as adverbial expressions.

To put it another way, this theory does not take the *dictum* in the proposition

‘The cat is on the mat’ signifies the cat to be on the mat.

as a direct object of ‘signifies’. On the contrary, ‘signifies’ is here used intransitively, and the *dictum* is a regarded as a kind of adverbial modifier. As a result, the active/passive transformation is blocked; one cannot infer

For the cat to be on the mat is signified by ‘The cat is on the mat’.

And therefore one does not have to look for some entity of which the *dictum* ‘for the cat to be on the mat’ can be truly affirmed.

Peter of Ailly accepts such an adverbial theory of propositional signification,[58] as do lots of other people. In fact, this theory is what was really behind Peter’s rejection of the active/passive inference, and why he said it resulted in an ill-formed expression. Adverbs cannot serve as subject of propositions.

1. Questions and Problems

There are obvious questions to be asked of this theory: How is signification in the adverbial sense related to signification in the nominal sense? That is, what is the relation between *how* a proposition signifies and *what* it signifies? If there is none, then is ‘signification’ being used just equivocally here? How does adverbial signification fit the basic notion of signification as “establishing an understanding”? No one, to my knowledge, ever gave a very satisfactory answer to these questions — or even addressed them.

There is a more general problem too, it seems to me. What is the difference, on this theory, between signifying that the cat is on the mat, on the one hand, and signifying that the cat is *not* on the mat — or, for that matter, signifying that the mat is on the cat? The problem is that this theory seems to regard *dicta* and ‘that’-clauses as unanalyzable expressions that have to be treated as a whole; their semantic role does not seem to be in any way based on the semantics of their constituent categorematic or syncategorematic terms. In effect, they are treated as semantic primitives.

The adverbial theory has the obvious advantage of not requiring its holders to find room for “total” or “adequate” significates of propositions in their ontologies. But this metaphysical innocence, it seems to me, is bought at the price of explanatory power. We started off wondering whether a proposition had a signification of its own, as a whole, in addition to the significations of its component

[58] See, for example, his *Conceptus et insolubilia*, fols. 10^{vb}–11^{ra}; Spade trans., § 159 (pp. 48–49).

categorematic terms. This theory says yes it does. But then when we ask for an explanation of that additional signification, all we get for an answer is "Oh, that's primitive." In short, this theory leaves our questions unanswered.

It's true that any theory has to start somewhere, and something has to be taken as primitive. But this has to be done judiciously. To locate one's primitives so close to the original question is to minimize the explanatory value of one's theory. That's not to say the theory is false; it's just to say that it doesn't tell us very much.

F. Adverbial Signification as the Basis for A Theory of Truth

The adverbial theory of signification was the basis for an account of truth conditions. There were various ways of expressing it, but one common formulation put it this way: A proposition is true if and only if

> howsoever it signifies, so it is the case (*qualitercumque significat ita est*).

Put more colloquially, however the proposition (adverbially) signifies the world to be arranged, the world is arranged that way. In short:

> if a proposition *P* signifies (adverbially) *that p*, then *P* is true if and only if *p*.[59]

On the basis of the common Latin expression of this criterion, let us call this the *'qualitercumque'*-criterion of truth. It plainly supposes a form of a "correspondence" theory of truth. But unlike certain modern correspondence theories, which require that true propositions correspond to some fact or state of affairs, this version, by borrowing on the metaphysical neutrality of the adverbial theory of signification, makes no metaphysical claims whatever.[60]

There are minor complications that arise if one wants to generalize this formula to apply to past- or future-tensed propositions or to modal ones.[61] But let us not worry about them here.

Peter of Ailly maintained an adverbial theory of truth conditions.[62] So did a certain Henry Hopton, a fellow of University College, Oxford, in 1357, and author of a treatise *On the Truth and Falsehood of a Proposition*.[63]

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[59] Those of you who are familiar with such things will recognize that this looks very much like Tarski's famous "criterion of adequacy" for any theory of truth. See Tarski, "The Concept of Truth in Formalized Languages," § 1.

[60] Of course whatever objections one might have to an adverbial theory of signification will be inherited by any account of truth conditions that appeals that theory of signification. Metaphysical neutrality does not come without a price.

[61] See, for example, the references in n. 58 above.

[62] *Ibid*.

Buridan allows the *'qualitercumque'*-formula as a criterion of truth,[64] but he says it is only a manner of speaking and there is nothing special about the formulation. In particular, despite the wording of the formula, it really has nothing to do with signification at all. It's just a kind of shorthand way of saying what is said more fully and in detail in Buridan's rules of truth in terms of *supposition*-theory[65]:

> And so it seems to me that in giving causes of truth and falsehood, it is not enough to go to the significations of terms. Rather [one must] go to [their] suppositions.

Nevertheless, he says (Text **(71)**):

> But finally, it must be noted that we can use names at will. When several people generally use this way of speaking, so that we say of every true proposition that "it is the case," and of every false one that "it is not the case," I have no intention of abolishing this way of speaking. Rather, for the sake of speaking more briefly, I will perhaps use it [myself], always meaning by it not what [the clause] signifies by [its] primary imposition, but rather the causes of truths or falsehoods given above, [which are] different for different [kinds of] propositions, as had been said [above].

For Buridan, the truth value of a proposition will depend in part on the semantic contributions of its constituent terms. In particular, the truth value of a proposition will depend on the supposition of its terms. But for those who (like Robert Fland) emphasize the conventional nature of spoken and written language at every level, there will in general be no such guarantee that the truth value of a whole proposition is going to depend on the semantic role its parts play. As a result, while Buridan gives his truth conditions in terms of the supposition of terms, those who adopt an adverbial theory of truth conditions, not just because it is traditional but because of its lack of metaphysical commitment, never really get beyond the level of dealing with propositions as a whole, without regard for their constituent terms.

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[63] On Henry, and on his treatise, see Ashworth and Spade, "Logic in Late Medieval Oxford." The treatise was printed in 1494, attributed to William Heytesbury, in William Heytesbury, *Tractatus Gulielmi Hentisberi de sensu composito et diviso* … On the correct attribution, see the notes to Ashworth and Spade. Hopton's treatise appears to have been very influential in the second half of the fourteenth century.

[64] See John Buridan, *Sophismata*, Ch. 2, the statement of sophism 1, Scott ed., p. 36; Scott trans., p. 83. Note: The text of the Latin edition at this point does not correspond to Scott's own translation, and makes no sense as it stands. I have not tracked down the details of the error, but the Latin has obviously been garbled. Note also that although the passage occurs in the original statement of sophism 1, there is nothing in the rest of Ch. 2 to suggest that Buridan rejects the *'qualitercumque'*-formula, provided it is properly understood. See also the end of Text **(73)**.

[65] Buridan, *Sophismata,* Ch. 2, from conclusion 8, Scott ed., p. 42; Scott trans., p. 90. We will talk about such suppositional truth-rules in Ch. 8 below.

The *'qualitercumque'*-notion of truth was a common and generally accepted one, which is why Buridan was loath to reject it, even though he completely reinterpreted what it meant. Other people too, like Buridan, accepted this criterion of truth without thereby committing themselves to an adverbial theory of signification.

G. Direct and Consecutive Signification

Some people who used the *'qualitercumque'*-account of truth distinguished "direct" signification from what they called "consecutive" signification. Thus, for example, Albert of Saxony (one of Buridan's pupils)[66]:

> Seventh, I say that every proposition signifying itself to be false is false. This is clear, because it signifies the very same proposition itself to be [both] true and false.[67] For by *direct signification* it signifies itself to be false … But by *consecutive signification* it signifies itself to be true. And this is false, namely that the same proposition is true and false.

And, for that matter, Buridan himself in Text **(73)**.[68]

The idea is this: According to the *'qualitercumque'*-notion of truth, a proposition is true if and only if *howsoever* it signifies, so it is the case. Now, although it doesn't quite follow, nevertheless it is only a small step from this to saying that *whatever* is required for the truth of a proposition is signified by that proposition.[69]

Consider then the proposition 'The cat is on the mat', and assume that the normal linguistic conventions are in force. In that case, to begin with, the proposition signifies *that the cat is on the mat.* This is what Albert and Buridan and others call its "direct" signification. And in order for the proposition to be true it must be the case that the cat is on the mat.

But if the proposition is true, it must also be the case that there is an animal on the mat, and that the cat is on something, and that God exists (if you think

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[66] Albert of Saxony, *Perutilis logica*, from tract. I, Ch. 6. Translated from the 1522 edition, fol. 4[rb]. The Latin text is quoted in Spade, *The Mediaeval Liar*, item xxiv, p. 47.

[67] Reading *'quia significat eandem propositionem se ipsam esse veram et falsam'* with the edition. But I suspect the correct reading should be *'quia significat eadem propositio se ipsam esse veram et falsam'* = 'because the same proposition signifies itself to be [both] true and false'.

[68] Both of these passages occur in the context of a discussion of the Liar paradox, about which I will have a little more to say at the very end of this chapter. Note: In Scott's translation of Buridan's *Sophismata*, '*consecutive*' (= consecutively) is translated as "indirectly."

[69] The Mertonian Thomas Bradwardine seems to have been the first to take this step explicitly: "Every proposition signifies or denotes either as of now or simply [the disjunction refers to two different kinds of consequence relations. Don't worry about the distinction here.] everything that follows from it either as of now or simply." See the edition in Roure, "Le Problématique," p. 297; the Latin is also quoted in Spade, *The Mediaeval Liar*, item lxiv, p. 108. For a discussion, see Ashworth and Spade, "Logic in Late Medieval Oxford," pp. 38–39, and Spade, "*Insolubilia* and Bradwardine's Theory of Signification."

that is a necessary truth), and that 2 + 2 = 4, and so on. In short, anything that follows from what a proposition directly signifies also has to be the case in order for that proposition to be true. Thus if we say that *whatever* is required for the truth of a proposition is signified by that proposition, then whatever follows from what a proposition directly signifies is also signified by that proposition. And this is what Albert and Buridan and others call "consecutive" signification.[70]

In this sense then, for those who hold this view, a proposition's adverbial signification is "closed," as modern logicians say, under the consequence relation. That is, if a proposition signifies that such and such, it also signifies all the consequences of such and such, and all their consequences, and so on.

1. Some Implications of This Distinction

This closure of signification under the consequence relation is a doctrine with some very interesting implications. For instance, if the specification of truth conditions for a proposition presupposes the notion of consequence, as this doctrine does, then one cannot define valid consequences as the truth-preserving inferences, since that would be plainly circular. And while, as far as I know, no one ever explicitly made exactly that point, we do find a few authors basing the notion of consequence on something other than the preservation of truth. The Mertonian Roger Swyneshed, for example, explicitly denied that valid consequences always preserve truth[71]:

> The second conclusion: In some valid formal consequence the false follows from the true.

Swyneshed went on to say that, while valid consequence does not necessarily preserve truth, it does preserve the property of signifying (principally[72]) as is the case[73]:

> If from some propositions each of which signifies principally as is the case there follows some proposition, the latter signifies [principally[74]] as is the case. But if from some propositions one of which signifies [principally[75]] otherwise than is the case, and all the others [signify principally] as is the case, there follows some proposi-

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[70] Necessary truths, like 2 + 2 = 4, follow from anything. Note: This so called "paradox of strict implication" was not taken for granted in the Middle Ages; it depends on the particular author's theory of consequence.

[71] Translated from Spade, "Roger Swyneshed's *Insolubilia*," § 26, p. 189. The cases where this happens are the semantic paradoxes like the Liar.

[72] "Principal" signification appears to be what we earlier called "total" or "whole" or "adequate" signification. See p. 172 above. See also Spade, "Roger Swyneshed's Theory of *Insolubilia*," p. 106.

[73] See Spade, "Roger Swyneshed's *Insolubilia,*" § 35, p. 191.

[74] Some manuscripts have this word, while other omit it.

[75] Ditto.

> tion, it does not follow that the latter [proposition] signifies as is the case.

Again, it was sometimes said that any proposition implies its own truth as a logical consequence.[76] Thus, from 'The cat is on the mat' you can validly infer 'The proposition 'The cat is on the mat' is true'.[77] As a result, every proposition signifies its own truth — at least consecutively.[78]

This claim was used by some authors[79] to provide a "solution" to the famous "Liar paradox." Consider the proposition 'This proposition is false', indicating itself. At first glance, it appears that this proposition can be neither true nor false. For (to put it loosely) if it is true, then what it says must be so, which means it is false after all. If it is false, then since that is just what it says, it is true after all. That is the paradox.[80]

But let us apply the claim that propositions signify their own truth to this proposition in particular. Directly, the proposition signifies itself to be false. Consecutively, it (like all propositions) signifies itself to be true. Since both these conditions have to be met in order for the proposition to be true, and since it is impossible for both of them to be met (no proposition can be both true and false at once), it follows that the paradox is broken and that the proposition is really false after all.

Note how, on this view, the other half of the paradox fails. You can no longer argue that if the proposition 'This proposition is false' is false, as we just concluded it was, then since that is exactly what the proposition says it follows that it is true after all. For on this theory that is *not* exactly what the proposition says; it's only part of what it says.[81]

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[76] See, for example, Buridan in Text **(73)**. Note that Buridan goes on to revise the view he describes there. See Scott ed., pp. 135–136; Scott trans., pp. 194–195; Hughes ed., pp. 66.105–70.145; Hughes trans., §§ 7.7.1.1–7.7.2, pp. 67, 69 & 71 (paperback, pp. 48–50). See also Bradwardine as described in Spade, "*Insolubilia* and Bradwardine's Theory of Signification." Bradwardine actually makes this claim only for *insolubilia* (= paradoxical propositions like the Liar paradox), but his own principles allow the claim to be generalized to all propositions whatever. See *ibid*., pp. 121–124. See also *ibid*., n. 34, for other authors who maintained this claim.

[77] Nominalists who identify the bearers of truth value with the sentence-token would of course have to add an existence-clause to this claim: If the cat is on the mat, and a sentence-token of the form 'The cat is on the mat' exists, then that sentence-token is true. Some especially careful authors added yet another proviso: that the normal linguistic impositions be in effect.

[78] The self-referential proposition 'This proposition is true' would also signify its own truth directly.

[79] See the references in n. 76 above.

[80] Note that the paradox is not just a contradiction. We have no trouble dealing with contradictions; contradictions are just false. But what we have here is a proposition that seems to generate a contradiction whether we say it is true or whether we say it is false. That is an altogether different story.

[81] I am not recommending this theory; I am only describing it. For a criticism, see Spade, "*Insolubilia* and Bradwardine's Theory of Signification."

H. Additional Reading

For additional reading on the material covered in this chapter, see: Hubert Elie, *Le Complexe significabile;* Gedeon Gál, "Adam of Wodeham's Question on the 'Complexe Significabile' as the Immediate Object of Scientific Knowledge;" Gabriel Nuchelmans, "The Semantics of Propositions," "Adam Wodeham on the Meaning of Declarative Sentences," *Theories of the Proposition: Ancient and Medieval Conceptions of the Bearers of Truth and Falsity,* and *Late-Scholastic and Humanist Theories of the Proposition*. (The last item deals mostly with a period later than the one we are concerned with, but there's lots of interesting material in it.)

Chapter 7: Connotation-Theory

onnotation-theory is a very complex doctrine. There are lots of papers in the secondary literature that talk about it to some extent, but there are two main papers that talk about it in some detail. First, there is Loux's "The Ontology of William of Ockham," which is one of the two introductory essays in his translation of Part One of Ockham's *Summa logicae*. Second, there is my own paper, "Ockham's Distinctions between Absolute and Connotative Terms."[1]

Loux's paper is an excellent account. But I think it is wrong on a very big point: the theory it presents is not Ockham's, or at least not Ockham's as I reconstruct him. Instead, it is closer to Buridan's. In other words: fine paper, wrong theory. I hasten to add that it is no great criticism of Loux to say this, since when he was writing no one had these differences sorted out.

I used to think Ockham's theory and Buridan's were pretty much the same here, but that where Ockham emphasized some points and was clear about them, while he was unclear about others or didn't discuss them, Buridan was conveniently just the reverse, so that the two theories complemented each other very nicely. I now realize this is not so. Their doctrines are not the same, although they are much alike. So I will have to treat them separately.

A. The Theory of Paronymy

But first I want to look at some background: the theory of "paronyms" or "paronymous names" in Aristotle, Augustine (354–430) and Anselm (1070–1179).

And what are paronymous names? Well, the classic text on this is found at the beginning of Aristotle's *Categories* 1, 1^a12–15 (Text **(1)**):

> Whatever get from something the names by which they are called, but differ in ending, are called "paronyms." For example, a gram-

[1] The original title of this paper was "Ockham's Distinction …" — singular — and in fact that is the way it is listed in the table of contents of the issue of *Vivarium* in which it appeared. But, for some reason, on the first page of the actual article, 'Distinction' has been turned into the plural 'Distinctions'. So I'm afraid that is the title by which it is known. As far as I know, Ockham has only *one* theory of the distinction between absolute and connotative terms.

> marian [is so called] from grammar, and a brave [person is so called] from bravery.

And that is pretty much all Aristotle has to say on the topic.

From Aristotle's remark, and particularly from his examples, you might get the idea that a theory of paronymous names would be simply a theory of concrete and abstract names. This idea would be then reinforced if you compared Aristotle's comment with, for instance, Ockham's remark at the beginning of his discussion of concrete and abstract names in *Summa of Logic* I.5, § 2:

> You must observe that a concrete [name] and its [corresponding] abstract [form] are names that have a similar beginning vocally, but do not have similar endings. For example, it is plain that 'just' and 'justice', 'strong' and 'strength', 'animal' and 'animality' begin with a similar letter or syllable, but do not end alike.

Ockham's remark is clearly based on Aristotle's.

Now if we insist on the syntactic criterion that both Aristotle and Ockham mention — that is, that paronymous names differ only with respect to their endings — then what we will end up with is indeed probably only a theory of concrete and abstract names, and a pretty inadequate and cramped one at that. But if we relax that syntactical stricture and look at what is semantically interesting about paronymous names, we will find something of much more general interest.

Consider, for instance, the case of 'just' and 'justice'. When we call something just, we do so by making a kind of "oblique reference," as it were, to something else — to the justice it exemplifies or has, in virtue of which we call it just. Similarly, when we call someone brave, we do so with one eye, so to speak, on something else — on the bravery that person displays or possesses, in virtue of which we call him or her brave.

On the other hand, when we call a certain virtue justice or bravery, we do not make this kind of oblique reference to something else. The justice or the bravery is all that is involved.

What is semantically interesting about paronyms, therefore, is this feature I have just called "oblique reference." Our task will be to specify as precisely as we can just what is going on there.

So considered, the theory of paronymy is but a special case of the theory of absolute and connotative terms that was developed to a very high degree in the fourteenth century, particularly by Ockham and Buridan. The theory of connotation turns out to be exactly the theory of this kind of "oblique reference," in contexts that include but go beyond paronyms in the sense Aristotle described.

So my interest here is not so much in the theory of paronymy narrowly taken as it is in what might be called "early connotation theory," although the term 'connotation' was not used until later. I will focus on two authors: **(1)** on St. Augustine, who does not so far as I know discuss paronymy anywhere directly, and certainly does not in the passages I will be considering, but who does have some things of great interest to say that bear on connotation-theory more gener-

ally; and **(2)** on St. Anselm, who has a great deal to say about a particular case of paronymy, which will also bear on connotation-theory more generally. Then, later on in the chapter, I will discuss the theory of connotation explicitly, as it was developed by Ockham and Buridan in the fourteenth century.

1. Augustine

Let us look first then at Augustine. And let us begin by looking at a passage that concerns, of all things, the question how to define a human being.

The passage is from Augustine's *On the Customs of the Catholic Church* (Text **(5)**), nowadays perhaps not among his most widely read works. Augustine is discussing what the chief good is for human beings, and along the way he decides that in answering this question it would help to figure out just what a human being is in the first place.

Augustine recognizes that somehow you need both soul and body to have a fully constituted human being. We do not, he says, properly call a corpse a human being, and neither do we properly call a disembodied ghost a human being. Somehow you need both body and soul in order to have a human being.

But, given that you need both in order to have a human being, what more can we say? Does it follow that the human being somehow is both — that he is a composite of body and soul in some way, perhaps after the Aristotelian fashion in which the soul is the substantial form of the body?

Well, no, not necessarily. Augustine considers three possible stories one might tell here. In effect, he is asking "What kind of word is 'man' (= 'human being', '*homo*')?

(1) Is it a "pair"-word? For example, we speak of a "team" of horses. Neither horse by itself is the team, but only the pair of them when they are somehow hitched together.

Is the word 'man' then like that, so that neither the body nor the soul is properly the man, but only the pair of them when they are somehow "hitched together"? This is more or less the Aristotelian theory, in a suitably loose sense: Body and soul are ingredients or parts of the composite whole we call a man, and the term we predicate of the whole is not truly predicable of either of its parts.[2] Is the word 'man' then like this?

(2) Or is the word 'man' more like the word 'lantern'? Two things are required in order to make a lantern. First of all, you need the container or case, the material artifact made out of metal and glass, let us say. But if that case did not support a flame, so that it is somehow in the service of the flame, then what you have is not a lantern, but a piece of hardware that is at most "potentially" a lantern, as Aristotle might have put it. Conversely, if you have a flame without the case, then you don't have a lantern either; you have a fire on your hands!

[2] Augustine also mentions the word 'centaur' as being another example of this kind of word. But that seems to be based on the odd view that a centaur is not half horse and half man, as is usually thought, but somehow a combination of a complete horse and a complete man. It's probably best to disregard the example.

Both case and flame are required in order to have a fully constituted lantern. Nevertheless, when you do have a lantern, it is not the pair consisting of the case and the flame that is the lantern. It is only the case that is properly speaking the lantern, although it is called a lantern only with a kind of "oblique reference" (and that is the notion we want to investigate) to the flame it supports.

The example is perhaps a bit strained, but its application to Augustine's main question is clear. Is the word 'man' like the word 'lantern'? That is, is only the material casing — the body — properly speaking the man, even though it is called a man only when it contains and supports a soul, so that it is the body that we call the man, but only with an "oblique reference" to the soul?

(3) Or finally, is the word 'man' more like the word 'rider'[3]? You don't have a rider unless you have a man who rides horses. You need both the man and the horse. Yet the rider is not the pair man-and-horse, somehow hitched together. And the rider is certainly not the horse considered as supporting and at the service of the man. Rather it is only the man who is properly speaking the rider, although we only call him a "rider" with a kind of "oblique reference" to the horse, which he governs and rules.

Is the word 'man' then like this? Is it really only the soul that is the man, even thought it is only called a man insofar as it is supported by a body, which it governs and rules[4]?

There is another passage from Augustine, this time from his *On the City of God* (Text **(8)**), where he lists the same three alternatives (in reverse order) and attributes them to the Roman pagan Eclectic philosopher Varro (116–27 BC), whom elsewhere he calls "most learned."[5] And he says that Varro chose the first alternative (the third in the ordering of Text **(8)**): that 'man' is a pair-word. Hence, according to Varro, the highest good for man is to lead a "mixed" life, that is, a mixture of the contemplative and the active life, so that the goods of both soul and body, and thus of the whole man, will be accommodated.

Later on in *On the City of God*,[6] Augustine says he thinks Varro treated the whole question superficially, because he tried to find the highest good of man in this life rather than in the next. And indeed, later in *On the Customs of the Catholic Church* Augustine makes it quite clear that he himself accepts the third of the alternatives he lists there, that it is the soul that is the man, but it is called a "soul" only insofar as it governs and rules a body. He says[7]:

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[3] That is, *'eques'* = 'horseman'. I did not want to translate this word as 'horseman', since in English that word has 'man' built into it, and so perhaps skews the point Augustine is making. Note that *'eques'* is etymologically related to *'equus'* = 'horse', so that the word means someone who rides *horses* — not someone who, say, rides a bicycle or is a passenger in a boat.

[4] The notion of "governing" and "ruling" is a characteristic Augustinian phrase that often occurs when he is describing the proper relation of the soul to the body. But there is no need to go into that here.

[5] Augustine, *De civitate dei* III.4.2.

[6] *Ibid*. XIX.4.132–180.

[7] Augustine, *De moribus ecclesiae catholicae* I.27.52, in Migne, PL 32, col. 1322. There are some textual problems here (an "earthly soul"?). I have translated as best I could.

> Therefore man, as he appears to man, is a rational, mortal and earthly soul using a body.

Augustine therefore accepts a basically Platonic picture of body and soul. For him they are like two distinct substances, not linked as matter and form, as they are for Aristotle, but by a relation of "governing and ruling," as the rider dominates his horse or — to use other familiar similes from the Platonic tradition — as the ruler is in his city or as the captain is in his ship. And if you ask what, properly speaking, is the man, Augustine will answer that it is the soul, but only when it is doing its job of governing and ruling the body.

a. Semantical Implications

Now you may think it is straining things a little to find much of logical or semantical importance in these passages. But if you do, you are wrong.

Although the technical machinery is not there, Augustine is in effect claiming here that the term 'man' is what later authors will call a "connotative" term, that it names or is truly predicable of souls, but only by making in addition a kind of "oblique reference" to — "connoting," as they will later say — the bodies those souls rule.

On the second theory Augustine considers (and rejects), the theory that the term 'man' is like the term 'lantern', 'man' is likewise a connotative term. But this time the semantic situation is just the reverse. This time the term names bodies, but only by making in addition an "oblique reference" to — "connoting" — the souls those bodies support and serve.

On the other hand, on the first theory Augustine considers (and likewise rejects), the theory that 'man' is a pair-word like 'team' or 'centaur', 'man' is not a connotative term at all, but what later authors will call an "absolute" term. It names composite wholes consisting of bodies and souls put together, but it does not do so by making any "oblique reference" to — "connoting" — either the body or the soul, or for that matter anything else.

It is perhaps hard to see what is different in this case, to see why on this first theory the term 'man' does not make an "oblique reference" to both bodies and souls. The problem here is that we do not yet have any general answer to the question: *How do we distinguish absolute from connotative terms?* That is a very difficult and delicate matter even for someone as technically-minded as Ockham, so that we should hardly expect a precise answer from Augustine — who was after all an extraordinarily deep and profound thinker, but scarcely a technician.

Nevertheless, I think I can explicate the difference in a preliminary, rather non-technical, but still revealing, way by appealing to the notion of what I shall call "conditional naming."[8]

Consider a name that names — that is, is truly predicable of — an object *x.* Now some names name an object *x* only under the condition that *x* satisfy cer-

[8] Do not expect too much from this theory of "conditional naming." I am making it up solely for the purpose of illustrating a point.

tain requirements. For instance, the name (or description) 'the President of the United States' names a certain individual person. — as I write, Bill Clinton. But it only names him under the condition that he occupies the office of President. After he leaves office, that same term will no longer name him because he will no longer satisfy the condition.

On the other hand, other names name objects without any condition at all — or, if you will, they name those objects only under the condition that those objects exist, but under no further condition. For example, the name 'Bill Clinton' names a certain individual, and will continue to name that same individual — that is, to be truly predicable of him — provided only that he continue to exist. (For present purposes, we will ignore the possibility that he might change his name. That is, the "conditions" we are concerned with here pertain only to the situation in the world; we hold the language — the imposition of terms — fixed.)

Now a term that names objects only under the one condition that those objects exist will be called an "absolute" term. A term that names objects only under the condition that those objects exist and also satisfy some further requirement will be called "connotative."

What makes this distinction so hard to pin down precisely is that some terms perhaps name objects under some further condition, where that further condition is nevertheless automatically or necessarily satisfied, given that the objects exist at all. That does not necessarily mean the further condition is not there, or that it is not a further condition.[9]

In effect, then, the difference between absolute and connotative terms, and the difficulty in distinguishing them, is a little like the situation with Kant's distinction between categorical and hypothetical imperatives. A categorical imperative is a pure imperative, with no condition attached to it explicitly or even implicitly. A hypothetical imperative, however, does have some condition attached to it, even if the condition is only implicit,[10] and even if the condition is one that is automatically and necessarily satisfied, given the kinds of beings we are.[11]

These considerations will perhaps suffice to give you a kind of rough and ready sense of the distinction between absolute and connotative terms. The exact specification of that distinction need not concern us yet; we'll talk about that later in this chapter. But for now, let us see how the distinction can be applied to the texts we have been considering from Augustine.

On the second and third theories Augustine considers in Text **(5)** — the "lantern"-theory and the "rider"-theory — it is clear that we are treating 'man' as a connotative term in the sense just described. On the second theory, the term

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[9] So called "natural kind" terms may be like this, if natural kinds are such that a thing of one natural kind cannot change into a thing of another natural kind without losing its identity and becoming a different individual altogether.

[10] For example, the sign on the door: "Push." Understand the implicit condition "if you want the door to open."

[11] For example, various commands based on an understanding of human nature. "If you want to be happy — and of course we all do, since that is part of human nature — then cultivate a circle of friends." Such hypothetical imperatives with guaranteed conditions Kant calls "precepts of prudence."

names bodies, but does so only under the condition that those bodies support and serve souls. If they do not do that, as for instance they will no longer do after the departure of the soul at death, then the term ‘man’ no longer names — can no longer be truly predicated of — those bodies, even though those bodies continue to exist and to retain their identity, but now as corpses.

On the third theory Augustine considers, the one he accepts, the term ‘man’ names souls, but only under the condition that those souls inhabit and rule a body. If they do not do that, as for instance they will no longer do after death, then the term ‘man’ no longer names — can no longer be truly predicated of — those souls, even though the souls continue to exist and to retain their identity as disembodied spirits. They are souls, and in fact the same souls they were all along, but they are no longer men.

On the first theory, however, the pair-word theory, things are different. There the term ‘man’ names a whole composed of body and soul. It does not name either the body or the soul individually — either when they are separated from one another or when they are together — any more than the word ‘man’ names my foot, either severed or attached.

Now the term ‘man’ on this first theory names the whole composite of body and soul, provided only that that whole exists. If the composite is broken up, so that body and soul are separated, then the whole no longer exists, so that there is no longer anything for the term to name. The term ‘man’, therefore, names the composite objects it does, on this theory, only under the condition that those composites exist. There is no further condition, implicit or explicit. Hence the term is not connotative, but “absolute.”

Of course, you might insist that there is an implicit further condition after all, one that is automatically and necessarily satisfied — namely the condition that those composites consist of body and soul, or some other such condition. But this just brings us back to the point that an exact and technical distinction between absolute and connotative terms is a complicated and delicate matter. And I said we would put that off until later.

This then is our first pass at the distinction between absolute and connotative terms. It’s a good start, but clearly much remains to be done.

2. Anselm

Now let’s turn to Anselm. There are two texts from Anselm I want to consider. The first does not deal with paronymous terms especially, but more generally with “connotative” terms in the sense we have just discussed. The second text however does deal specifically with paronymy.

a. Ontological Implications

The first text is from Anselm's dialogue *On the Fall of the Devil*, Ch. 11. Here it is[12]:

> For many things do not exist in reality in the way they are said. For example, "fearing"[13] is called "active" according to the form of the word, although it is passive in reality. And so too blindness is said [to be] something according to the form of speaking, although it is not something in reality. For just as we say of someone "He has sight" and "Sight is in him," so we say "He has blindness" and "Blindness is in him," even though this is not something but more a "non-something," and to have it is not to have something. In fact [it is] to lack what is something. For blindness is nothing but non-sight, or the absence of sight, where sight ought to be. But non-sight or the absence of sight is no more something where sight ought to be than [it is] where sight ought not to be. Thus, blindness is no more something in the eye, because sight ought to be there, than non-sight or the absence of sight [is something] in a stone, where sight ought not to be. Many other things too that are not something are likewise called something according to the form of speaking, because we talk about them just as [we do] of existing things.

Now let's discuss it. In the dialogue as a whole, Anselm is concerned with the problem of evil, among other things, and he is at pains to maintain the Augustinian line that evil is not a thing, a reality in its own right. Nevertheless, Anselm wants to maintain also that the word 'evil' has a legitimate use (as Augustine would of course also say), and Anselm wonders how that can be.

His analogy with the term 'blindness' is instructive. When we say of someone that *sight is in him* or *there is sight in him*, or simply that *he has sight*, the structure of our sentence is, as it were, a kind of "picture" of what it is that makes that sentence true. That is, just as we use the word 'sight' and the word 'him' and the linking expression 'is in', so too, on the side of reality, we have the real property sight, a real entity in the ontology, and we also have the real person, and the former really inheres in or belongs to the other.

But when we say of someone that *blindness is in him* or *there is blindness in him* or that *he has blindness*, our sentence — even though it may well be true — is not in this same kind of way a picture of what makes it true. What makes it true is not that there is some mysterious property blindness that really inheres in that person, but rather that the same property we dealt with before — namely, sight — is *not* in that person.

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[12] Anselm, *De casu diaboli*, in *Opera omnia*, Schmitt ed., vol. 1, pp. 250.1–251.2.

[13] The Latin is *'timere',* the active infinitive "to fear."

In effect then, for Anselm the term 'blindness' is a connotative term (although he doesn't use that expression). It does not name (cannot be truly predicated of) anything at all, since blindness is not an entity in its own right. But we can truly say that blindness is in a person — not by referring to blindness, since there isn't any such thing, but by making a kind of "oblique reference" to the sight that is not there.

For Anselm then, despite its apparent simplicity, the term 'blindness' is really what logicians sometimes call an "incomplete symbol." The expression 'Blindness is in *x*' is really just a shorthand or abbreviated way of saying that sight is *not* in *x.*[14] The latter, unlike the former, does provide an accurate picture of what it is that makes it true. We have sight, which really is something (although not in *x*), and we have *x,* which is also really something, and we have the ontological relation of "being in," which really does *not* hold in this case.

The details of this can wait. But the moral of the story is already a rich and complex one. First of all, it means that not all the terms we can use in true affirmative propositions name things. That is, *our terminology is not a reliable guide to ontology*.

In effect, we already knew this moral from what we saw in Augustine. If you want an inventory of the entities in the world, you would surely list bodies and souls, but you would not list men separately. Men just *are* souls, if we follow Augustine; they are souls that satisfy certain conditions.

Absolute terms, then, are the ones that are linked to an inventory of the world. Connotative terms add nothing new to the ontology.

This suggests that connotative terms are in principle eliminable from our vocabulary, as the term 'blindness' can be dispensed with in Anselm, and as the term 'man' in Augustine could always be replaced by its definition: "a rational, mortal and earthly soul using a body" — in which all the terms are absolute (or, if they are not, can be replaced in turn by their definitions until we ultimately come to absolute terms). This will be an important thesis when we come to the connotation-theory of Ockham and Buridan.

A second and related moral to Anselm's story is then that connotation-theory may be used as a vehicle for reducing the number of entities in one's ontology. Thus, just as Anselm observes that we do not need blindnesses (or evils), so too it may turn out that we do not need lots of other things for which we have putative names. They can be parsed away, as Anselm did to blindness (and to evil). This is a program Ockham will adopt with a vengeance. He tried to pare down the number of ontological categories to two and two only: substance and quality alone. All terms in the other recognized Aristotelian list of categories were connotative, could in principle be eliminated from our vocabulary, and thus carried no "ontological commitment."[15]

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[14] Or actually, that sight is not in *x* and *ought* to be in *x,* as Anselm makes clear in the passage just quoted. But I am not concerned with the "ought"-claim here.

[15] See Ch. 6, p. 166, above.

b. Anselm's Semantics of Paronymy

Let us turn to the second Anselmian text I want to consider, and with it from blindness to literacy. This second text is Anselm's well known dialogue *De grammatico*, which has been extensively studied in several publications by Desmond Paul Henry.[16]

The topic that sets the stage for Anselm's dialogue concerns the Latin term *'grammaticus',* which means 'grammatical' or even 'grammarian'. Nevertheless, Henry suggests that, in order to catch the nuances of the term in the dialogue – and the nuances are quite important here — it is perhaps best to translate *'grammaticus'* as "literate," and to allow it to be used nominally, so that we can call someone *a literate* (note the article), just we might call someone *an illiterate*, without requiring any further noun.

In any case, the choice of the term *'grammaticus'* as the vehicle for the dialogue is no accident. First of all, it is a stock example of a paronymous term. Aristotle, for example, in Text **(1)**, says that the grammarian is so called from grammar — or, as we should now say, the literate from literacy.

But second, and of special importance given that *'grammaticus'* was taken as paradigmatic of paronymy, is the fact that there seems to be some disagreement among the traditional authorities over just what the term *'grammaticus'* signifies. On the one hand, in Ch. 4 of the *Categories*, where Aristotle is giving examples of the various categories, he lists 'γραμματικόν' for the category of quality (*Categories* 4, 1^{b}25–29):

> Each of what are said without any composition either signifies substance, or quantity, or quality, or relation, or where, or when, or situation, or having, or acting or being acted on. Substance is, to give an example, like a man, a horse; quantity, like two cubits, three cubits; quality, like white, γραμματικόν …

So *'grammaticus'* (switching now from Greek back to Latin) signifies a quality, presumably grammar or literacy, considered as a quality in the soul.

On the other hand Priscian, the famous Latin grammarian (c. 500 AD), says this about adjectives[17]:

> Adjectives are so called because they are usually adjoined to other appellatives [*i.e.*, common nouns] that *signify a substance*, or to proper names as well, in order to make manifest their qualities or quantities, which can grow or diminish without the destruction of

[16] Including all the items listed under his name in the *Bibliography* below. I will be citing Anselm's text according to the paragraph numbering given by Henry in his *The De Grammatico of St. Anselm*. (The same paragraph numbers are used in his *Commentary on De Grammatico*.) Henry's Latin text is based on the Schmitt edition in Anselm's *Opera omnia*, vol. 1, pp. 145–168.

[17] Priscian, *Institutionum grammaticarum* II.58.20.24. The Latin text may also be found in Henry, *Commentary on De Grammatico*, p. 213.

> the substance. For example, 'good animal', 'big man', 'wise *grammaticus*', 'great Homer'.

Here the term *'grammaticus'* — by coincidence one of the terms Aristotle picked as signifying a quality — is used by Priscian as one of those "appellative" terms, *i.e.* terms "naturally common to many,"[18] to which adjectives are attached and which signify substances. Hence according to Aristotle *'grammaticus'* signifies a quality, according to Priscian a substance. Which is it? That is the stage on which the dialogue takes place, although the lessons of the dialogue apply to other terms besides *'grammaticus'*.

Now, as you might expect, the solution to this apparent conflict is going to have to do justice to both our authorities, both to Aristotle and to Priscian. That is, we are going to have to find a way in which *'grammaticus'* and similar terms can be said to signify both a substance and a quality. And Anselm does this, in good Scholastic fashion, by making a distinction. He distinguishes two kinds of signification, which he calls signification *per se* (= "through itself") and signification *per aliud* (= "through something else").

Signification *per aliud* is linked with what Anselm calls "appellation," although not every case of appellation is a case of signification *per aliud.* We must therefore look at appellation.

Appellation is what appellative terms do. And an appellative term is, according to Priscian one that is "common to many"[19]:

> This is the difference between a proper and an appellative [name], that an appellative is naturally common to many.

Now the only plausible way a term can be "common to many" is by being truly predicable of many. Hence common nouns and adjectives are said to "appellate" the several things they are truly predicable of. Appellation is therefore what I earlier called "naming."[20]

According to Anselm, the term *'grammaticus'* appellates men — but only literate ones — at the same time it *per se* signifies the literacy those men possess (from Text **(17)**)[21]:

> But *'grammaticus'* does not signify man and grammar as one. Rather it signifies grammar *per se* and man *per aliud*. The name [*'grammaticus'*], even though it is appellative of man, nevertheless cannot properly be called significative of him; and although it is significative of grammar, nevertheless it is not appellative of

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[18] *Ibid*. II.58.14.15. Quoted below.

[19] *Ibid*.

[20] See p. 193 above. Be careful. The noun 'appellation' seems to be used sometimes in cases where a term names only one thing, even though the phrase 'appellative *name*' seems to be reserved for common nouns and adjectives.

[21] The *De grammatico* is a dialogue between a "master" and a "disciple." The master is speaking.

> it. I am now calling an "appellative name" of any thing [that] by which the thing itself is appellated [= called] in common usage. For [there is] no common usage by which it is said that grammar is *grammaticus,* or a *grammaticus* is grammar. Rather, a man is *grammaticus,* and a *grammaticus* a man.

The concrete term *'grammaticus'* therefore names men, but only under the condition that they possess literacy. It is therefore what will later be called a "connotative" term. It names men, but makes an "oblique reference" to literacy, an oblique reference that Anselm calls signification *per se.* (By calling it "*per se*" he indicates that he doesn't think there's anything "oblique" about it; it's the main kind of signification. We'll see why a little later.) Similarly, the concrete term 'white' names or appellates white things, but *per se* signifies whiteness (Text **(19)**).

On the other hand, the corresponding abstract terms *'grammatica'* (= literacy, grammar) and 'whiteness' appellate or name literacy and whiteness, respectively, but also signify them *per se*. In these cases, then, what the terms appellate and what they signify *per se* are the same. The things the terms name they name provided only that the things exist, and under no further condition. The terms are therefore what will later be called "absolute" names.

For absolute terms, therefore, appellation and *per se* signification coincide. For connotative terms, appellation and *per se* signification do not coincide, and in that case what the terms appellate they are also said to signify *per aliud*. To put it in a formula, for Anselm *signification per aliud is the appellation of what will later be called connotative terms.*

Now if you concentrate on the examples we have looked at so far, you might suppose that in general concrete terms are connotative while their corresponding abstract forms are absolute. But we already know that cannot be right. We have seen that for Anselm the abstract term 'blindness' is not absolute but connotative.[22]

There are cases in which this neat division breaks down the other way too, where we have concrete terms that are absolute. For example, Anselm tells us that the concrete term 'man' both appellates and signifies — that is, *per se* signifies — a substance, the actual man. It is therefore an absolute term and not a connotative one. It "signifies *per se* and as one the [things] of which the whole man consists" (from the first paragraph of Text **(17)**). Anselm therefore disagrees with Augustine, for whom 'man' is a connotative term.[23] Note that the concrete term 'man' is absolute for Anselm even though the word does have a corresponding abstract form, 'humanity', and did in the Latin of Anselm's day too. We may parse this fact as follows: The things named by the term 'man' will indeed automatically possess humanity provided only that they exist, since humanity is essential to them. But the condition that they possess humanity is not explicitly or im-

[22] See p. 197 above.

[23] See p. 193 above.

plicitly a condition built into the term ‘man’ itself. Thus the term ‘man’ names what it does unconditionally.

i. Signification *Per se* and Signification *Per aliud*

Let us now look more closely at the notions of signification *per se* and signification *per aliud*. They are both said to be kinds of signification, so that they must both in some way involve the “establishing of an understanding.”[24] How does this work, and what is the difference between the two kinds of signification?

We will begin by looking first at signification *per se*, or simply “signification.” (Anselm sometimes drops the *‘per se’* where it can be taken for granted.) Consider the following passage (from near the end of Text **(19)**):

> For since the name ‘white’ does not signify anything else than does the expression ‘having whiteness’, [therefore] just as the expression by itself (*per se*) establishes an understanding of whiteness for me, and not of the thing that has whiteness, so does the name.

I want to extract three claims from this text: **(a)** The term ‘white’ signifies the same as does the expression ‘having whiteness’. Moreover, just as the latter expression **(b)** “establishes an understanding” in me of whiteness, but **(c)** not of the thing that has the whiteness, so too does the simple term ‘white’.

This is a rich passage. In claim **(b)**, Anselm says that what term ‘white’ makes me think of, and so signifies, is just whiteness. But that is true of the abstract term ‘whiteness’ too. So why does Anselm say ‘white’ signifies the same as does the expression ‘*having* whiteness’ — claim **(a)**? Why does he not simply say it signifies the same as the term ‘whiteness’ does all by itself?

Well, as far as *what* the term signifies is concerned, both claims are true. I think what Anselm has in mind is not just the view that ‘white’ signifies the same as ‘having whiteness’ does, but that the former is somehow just a shorthand abbreviation of the latter. There is some further evidence for this in an argument we will look at in a moment.

If this is right, it is important. For in later connotation-theory, a connotative term was said to have only “nominal” definitions (plural — it can have more than one), whereas an absolute term did not but instead had something called a “real” definition. (The exact specification of this difference is a complicated matter we can defer until later.)

Now ‘having whiteness’ will later be taken as a nominal definition of the connotative term ‘white’. So if connotative terms are regarded as simply shorthand abbreviations for their nominal definitions (plural again), all those nominal definitions must somehow amount to the same thing — they must in effect be synonymous. This is a result that will be affirmed by Ockham. Whenever I use a connotative term, I am in effect using an abbreviation for *all* those synonymous nominal definitions, so that the connotative term signifies — I am made to think

[24] See Ch. 3, p. 63, above on this phrase.

of — whatever those synonymous definitions signify. And in virtue of what we called the "Additive Principle" in Buridan[25] and implicitly in Ockham, nominal definitions signify just whatever their constituent categorematic terms signify. In our example, 'having whiteness' has only one constituent categorematic term, 'whiteness', which makes one think of whiteness — and that is all. (The 'having' there seems to be regarded as a kind of logical particle — a syncategorema — without any independent significative function.)

Contrast this with the absolute term 'man'. That term has a definition, a so called "real" definition: 'rational animal'. Now if absolute terms were regarded as simply shorthand abbreviations of their definitions in the way connotative terms are of theirs, then whenever I used the term 'man', I would be in effect using in abbreviated fashion the expression 'rational animal'. But in virtue of the Additive Principle, the expression 'rational animal' not only signifies rational animals — *i.e.*, men — but also signifies *all* animals in virtue of the second component of the definition. Hence if absolute terms were simply abbreviations of their definitions, as connotative terms are of theirs, then whenever I used the term 'man' I would be made to think of all animals whatever.

Worse, 'animal' itself has a real definition: 'sensitive[26] organism'. And 'organism' does too, and so on until we come to a fully expanded real definition of man as a "rational, sensitive, living, corporeal substance."[27] Thus if absolute terms were simply abbreviations of their definitions, then whenever I used the terms 'man' I would be made to think of all substances whatsoever. And this is simply not so.

It follows then that absolute terms are not just abbreviations of their real definitions. Real definitions do not therefore just introduce a more abbreviated terminology, as for instance definitions do in certain styles of modern formal logical systems. Something else is involved. Real definitions are supposed to have something to do with the internal metaphysical structure of the thing defined.

Hence, since absolute terms are not just abbreviations, they may have alternative, non-synonymous real definitions. Those definitions must pick out the same things — and indeed, *necessarily* pick out the same things, since we're talking about definitions after all. But they need not have the same constituent terms. Again, this result too is affirmed by Ockham.

In drawing these consequences, I am of course going way beyond anything explicitly found in Anselm's text. But I do not think I am violating that text. I think it is legitimate to see there the roots of the later, more fully articulated doctrine.

Another point is worth making here. Although I said that in the later theory, connotative terms are simply shorthand abbreviations of their nominal definitions, we have already seen a case where this will not work without some adjust-

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[25] See Ch. 6, p. 166, above.

[26] That is, endowed with sensation. We're not talking here about delicate emotions or poetic souls.

[27] The sequence ends there, since substance is an Aristotelian category and therefore cannot be defined in terms of a difference plus a higher genus. That's what a category is: a "most general genus."

ments. 'Blindness' does not have a nominal definition. It cannot be regarded as simply an abbreviation of a more complex expression. 'Blindness', we said, is only a kind of "incomplete symbol"[28]; it can only be defined in context. That is, it is not the single term 'blindness' that can be regarded as an abbreviation for something else; rather it is the construction '*x has* blindness' or 'blindness is *in x*' that can be regarded as an abbreviation for '*x* does *not* have sight'.

This is important, because Ockham will later say that certain terms — for example, quantitative terms (*Summa of Logic* I.10, § 10) and indeed all terms in categories other than substance and quality — are connotative, even though some of them will be incomplete symbols and can be defined only in context.

Such terms will be part of what gives rise to the theory of "exposition," in which whole propositions, not just isolated terms, will be analyzed into more complex forms. The theory of exposition will not be discussed in detail in this book, mainly because no modern scholar has ever worked out the details of it so that there is not much I can say.[29] But exposition is historically linked to the theory of connotation, and here we see part of the reason.

There is yet another thing to be learned from Anselm's remark about 'white' and 'having whiteness'. Both expressions, he says (claim **(c)**[30]), signify — that is, *per se* signify — only whiteness. They do not signify *per se* the thing that has the whiteness. That is to say, the nominal definition of 'white' is simply 'having whiteness'; it is not '*thing* having whiteness' or '*substance* having whiteness' or anything like that. Anselm insists on this pretty strongly.

Similarly, the nominal definition of 'literate' (*grammaticus*) is 'having literacy (*grammatica*)', not '*man* having literacy'. Otherwise, if the nominal definition did include the word 'man', then when we say 'He is a literate man' — as we certainly can say with grammatical propriety — then, since connotative terms are just abbreviations of their definitions,[31] we would in effect be saying 'He is a man having literacy man', or something like that. (See Text **(18)**.) And that is something we certainly *cannot* say with grammatical propriety. Hence the fact that connotative adjectives, at any rate, can grammatically modify nouns implies that those nouns cannot be already built into the nominal definitions of those adjectives. (Whether the same point can be made in general, for words other than adjectives, is perhaps open to question, but Anselm apparently thinks it can.)

Now this raises an obvious question. If 'white' does not contain in its nominal definition a term for the bearer of whiteness, then how can the term 'white' be said to signify that bearer *per aliud*? In short, how in the case of connotative terms does appellation get to be a kind of signification at all?

Again, we are now in a position to see what signification *per se* is: *An absolute term signifies per se just what it appellates. A connotative term signifies*

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[28] See p. 197 above.

[29] Nevertheless, for what I *can* say about it, see Spade, "Five Logical Tracts by Richard Lavenham," pp. 83–93, and Spade, "Ockham, Adams and Connotation," pp. 608–611.

[30] See p. 201 above.

[31] I do not see how Anselm's argument in Text **(18)** will work without this assumption. The argument I am giving here is the "further evidence" I promised you on p. 201 above.

per se just what the absolute terms in its nominal definition appellate. But what is signification *per aliud* — and how is it a kind of signification?

On this point, Anselm gives a very curious illustration (Text **(19)**). Suppose you saw a white horse and a black ox, and someone told you "Strike it!," and you asked "Which one?" If he then said "The white" (I want to leave out the noun in virtue of the above argument), you know which one he meant; you would think of the white horse.

Now in a sense it is by means of the word 'white' that you are made to think of the horse; it's the only word in the sentence, after all.[32] But the word 'white' cannot do this all by itself. If you couldn't see the horse, say, you wouldn't know what the fellow meant. It is only in virtue of something else — in virtue of your seeing the white horse, and the other circumstances of the story — that the word 'white' can make you think of the horse and know it is what is meant.

Hence the term 'white' does not *per se* — by itself — signify the bearer of whiteness, but only with the help of something else — *per aliud*, only with the help of the circumstances.

Signification *per aliud* is therefore a thoroughly context-dependent notion. It depends on appellation or naming in the occurrent sense, what a term is actually used to appellate or name on a given occasion. If we want to say that a connotative term *per aliud* signifies *all* its bearers, all the things the term *can* be used to appellate or name truly, we can only say that in a very weak, dispositional sense. The term does not actually make us think of those things in any sense, except on the particular occasions when it is actually used to name those things.

In Anselm's theory, therefore, signification *per se* is the dominant notion. Signification *per aliud* is a definitely subordinate, and indeed rather strained and contrived, kind of signification. This emphasis will be shifted by the time we come to Ockham and Buridan. The shift represents more a shift in the theory of signification than a change in the theory of connotation terms itself.

B. Connotation-Theory in Ockham

Let's turn now to the fourteenth century. And let's begin by looking at how Ockham draws the distinction between absolute and connotative names. Here is what he says in *Summa of Logic* I.10, § 1:

> Merely absolute names are those that do not signify something principally and [something] else, or even the same [thing], secondarily. Rather, whatever is signified by the name is signified equally primarily [by it]. For example, it is clear with the name 'animal' that it does not signify [anything] but cattle, asses and men, and so on for other animals.

[32] In English, I added the definite article 'the'. But there is nothing corresponding to it in the Latin. And in any case, it's not the definite article that is making me think of the horse.

Then he goes on, in § 5: "But a connotative name is one that signifies something primarily (or principally) and something secondarily."

At the first level then we have the following preliminary way of drawing the distinction:

(1) Absolute names are such that whatever they signify they signify "primarily."

(2) Connotative names are such that they signify some things primarily and some things "secondarily."

We shall see later on that there is reason to refine this, that Ockham doesn't really mean that *all* connotative names must signify some things primarily and some things secondarily; some connotative terms will turn out to signify nothing at all primarily. But they will signify some things secondarily. And that, I think, is going to be the distinguishing feature of connotative names.

What does it mean to signify something "primarily" or "secondarily"? Well, first some things the locutions do *not* mean. They do not mean "immediately" *vs*. "mediately," as they perhaps do in *Summa of Logic* I.1, §7:

> Now I say that utterances are signs subordinated to concepts or intentions of the soul, not because … these utterances always signify those concepts of the soul *primarily* and properly, but rather because utterances are imposed to signify the same things that are signified by the concepts of the mind, so that the concept *primarily* signifies something naturally, and the utterance *secondarily* signifies the same thing …

Neither does 'primarily' refer to the first sense of 'signify' distinguished in *Summa of Logic* I.33 (§ 1), while 'secondarily' refers to the second sense distinguished there (§ 2).[33] Rather, let's look at his example:

'Animal', he tells us (I.10, § 1), is an absolute name, and this means that whatever it signifies it signifies only "primarily." And he also tells us that 'animal' signifies nothing but "cattle, asses and men, and so on for other animals." In other words, the primary significates of a term appear to be exactly the things the term can be truly predicated of. (This is what Anselm had called "appellation.")

Now we know (from *Summa of Logic* I.33, §§ 1–2) that there is a narrow and a broad sense of that, according to whether we are talking about predication of the form 'This *is* an animal' (present tense) or are also allowing predications of the form 'This *was* …' or '… *will* be …' or '… *can* be an animal'. In short, primary signification seems to be signification in either of the first two modes listed in *Summa of Logic* I.33. Secondary signification, then, will include cases of signification in one of the two remaining modes distinguished there.

Now we already know enough about Ockham's supposition-theory, from our discussion of his dispute with Burley over the signification of terms,[34] to

[33] On these senses, see the discussion in Ch. 5, pp. 150–151, above.

know that for Ockham it is in general in personal supposition that a term supposits for what it signifies. And it's going to turn out that this means "for what it *primarily* signifies."[35] So the primary significates of a term are, to express it in several equivalent formulations:

(1) its significates in one of the other of the first two modes described in *Summa of Logic* I.33; or

(2) its personal supposita; or

(3) its appellata (to use Anselm's term[36]).

Thus it will be easy to tell what the primary significates of a term are. But how do we tell what else, if anything, a term signifies? That, of course, will be the secondary significates of the term.[37] That is, what else does a term signify besides what it can be predicated of? In short, how do we tell which terms are absolute and which are connotative — and, for the connotative terms, how do we tell what they "connote" or signify secondarily?

The practical problem here will become obvious if we look at some of the examples Ockham gives. In *Summa of Logic* I.10, § 4, he tells us that 'man', 'animal', 'goat', 'stone', 'tree', 'fire', 'earth', 'water', 'heaven', 'whiteness', 'blackness', 'heat', 'sweetness', 'smell', and 'taste' are all absolute terms, whereas in § 12 he says that 'true', 'good', 'one', 'power', 'act', 'intellect', 'intelligible', 'will', and 'volible'[38] are connotative. What is the difference between them? The two lists do not, at least for me, suggest any obvious rule that would allow me to classify other terms and be confident I was doing it correctly. In short, you can't tell the difference between absolute and connotative terms by "feel"; it's not obvious on the face of it.

1. Ockham's Theory of Definition

Let's push a little deeper. In *Summa of Logic* I.10, §§ 2 and 5, Ockham tells us that absolute names have no nominal definitions, whereas connotative names do. (This claim is perhaps implicit in Anselm's theory, as described above, although of course the terminology is not his.) This distinction will be the distinguishing feature between absolute and connotative names for Ockham, and we have to figure out what it means. It will be a long story.

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[34] See Ch. 5, pp. 140–143, above.

[35] There will be complications about tense and modality that reflect the differences between the first and second modes of signification in *Summa of Logic* I.33, but let's not worry about them for now.

[36] Ockham does not use *'appellatio'* in this sense.

[37] But remember that Ockham says that it is possible for a term to signify secondarily the same things it signifies primarily. See *Summa of Logic* I.10, § 1, as quoted on p. 204 above. We will work out the implications of this in due course.

[38] That is, something that can be willed, that can be the object of a volition.

For help, let us turn to Ockham's chapter on "definition," *Summa of Logic* I.26. There we learn that there are two types of definition[39]:

(1) definitions "expressing the *quid rei*," nowadays more commonly called "real definitions"; and

(2) definitions "expressing the *quid nominis*," more commonly called "nominal definitions."

(The expressions '*quid rei*' and '*quid nominis*' mean literally the "what of the thing" and the "what of the name," respectively. We will see more about them in a little while.)

We already know that all and only connotative terms have nominal definition (from *Summa of Logic* I.10, §§ 2 and 5). Therefore, the only terms that have real definitions will be absolute terms. But not all absolute terms will have real definitions. For instance, proper names in the category of substance ('Socrates', 'Plato') will be absolute terms, and yet they do not have real definitions, since you can't define the individual.[40] And, for various other reasons, there are no real definitions of the category terms 'substance' and 'quality' (and of course not the names of the other categories, since those terms will be connotative for Ockham[41]), of the absolute "transcendental" term 'being',[42] and perhaps of some other absolute names as well.

As a result, not every name will have a definition, real or nominal. Some names have no definitions at all. Let me explain more fully.

In English common discourse, we frequently use the term 'definition' very broadly, so that we say we are "defining" a term when we find some other term or expression that is, in some appropriate sense, "equivalent" (the mediaevals would say "convertible") with it. Ockham's notion of definition is much narrower than that. Perhaps it *is* possible to "define" all terms in that very broad sense, but not in Ockham's very precise sense.

a. Real Definitions

Let us look more closely at the two kinds of definition. In *Summa of Logic* I.26, § 4, Ockham says that definitions expressing the *quid rei*, "real definitions," are themselves of two kinds, real definitions in the broad sense and real definitions in the strict sense.

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[39] See also *Quodlibet* V, q. 19 (Wey ed., pp. 553.1–557.91); Freddoso and Kelley trans., pp. 463–465. Additional material on the theory of definition may be found in *Summa logicae* III–2.31–33; III–3.23–26 (The third part of the *Summa logicae* is divided into four subparts. The last two passages occur in the second and third of them.)

[40] The indefinability of individuals was a standard claim in the Aristotelian tradition; real definition stops at the level of species.

[41] See p. 197 above.

[42] A "transcendental" term is a term that "transcends" the categories and is truly predicable of things in *any* category.

In the strict sense, a real definition is somehow supposed to reveal or express the inner metaphysical structure of what is being defined, the essential parts of it. For example, if you are giving a strict real definition of the term 'man', you are going to have to bring out somehow the notion of body and soul, matter and form — the essential parts of man. The traditional definition 'rational animal' is such a strict real definition.

In the broad sense, real definitions include, of course, real definitions in the strict sense, but also other expressions: they will include what are properly called "descriptive definitions," which Ockham discusses in *Summa of Logic* I.28, and which uniquely pick out things the term signifies by expressing or revealing not only their essential parts, but also certain accidents. I will say more about descriptive definitions in a moment.

Real definition in the strict sense are further subdivided. Some are "physical" definitions (that is, the kind of definition used in physics or philosophy of nature), and others are "metaphysical" definitions (*Summa of Logic* I.26, §§ 5–6).

The difference between them, syntactically speaking, is straightforward. Metaphysical definitions consist of a noun and one or more adjectives, all in the nominative case, whereas physical definitions consist of terms some of which are in oblique cases — that is, cases other than the nominative. Thus the metaphysical definition of 'man' is 'rational animal'. The noun 'animal' expresses that part of the animal consisting of matter together with its corporeality, life, and sense-powers. The adjective 'rational' brings out the further substantial form *reason* or *rationality*.

Now if you are alert, you will recognize at once that although 'animal' is one of the terms Ockham explicitly tells us is absolute (*Summa of Logic* I.10, § 10), 'rational' is going to be connotative. I just said it "brings out" reason or rationality, but of course it is not predicated of reason or rationality. It is not reason that is rational; it is the *man* who is rational. So 'rational' seems to "bring out" — to call to mind, to signify — something it does not signify primarily. That is, it is connotative.

I think this is going to be the difference in the end between metaphysical and physical real definitions in the strict sense. Real definitions in the strict and metaphysical sense may have connotative terms in them (although of course they are never definitions *of* connotative terms), while "physical" definitions do not. I say I "think" this is the direction Ockham is going, although the example he gives of a physical definition doesn't quite fit this. He gives the physical definition of 'man' as (*Summa of Logic* I.26, § 5): 'substance composed of a body and an intellective soul'.

In the Latin, there are two genitives here, two nouns in an oblique case: 'body' and 'soul'. Hence not everything is in the nominative. Strictly speaking, it is this that distinguishes it from a metaphysical definition. Of course, if Ockham is really trying to have no connotative terms here at all, he hasn't quite succeeded since 'intellective' seems to be connotative. (It connotes intellects, but is predicated of and so primarily signifies things that have intellects.) What he would have to say instead is something like 'substance composed of a body, life, sense-power and reason', thus eliminating all connotative adjectives.

In addition to definitions, Ockham also considers "descriptions" in *Summa of Logic* I.27. Just as definitions — or at least real definitions — uniquely pick out the defined in terms of essential parts, a description uniquely picks out the defined in terms of accidents alone. Thus when we say that man is a "featherless biped," we are giving a description, not a definition. Those features are accidents.[43]

In addition to definitions and descriptions, there are also mixed cases, cases in which things are uniquely picked out in terms of both essential parts and accidents. These are the so called "descriptive definitions" discussed in *Summa of Logic* I.28, and are included under the heading of "real definition" in the broad or loose sense. Ockham's example is 'Man is a rational animal, walks upright [and] has broad nails'.

b. Nominal Definitions

Now let's look at the other main kind of definitions, nominal definitions or, literally, "definitions expressing the *quid nominis*."[44] To get an idea what is going on here, go back and consider Augustine's discussion in *On the Customs of the Catholic Church*.[45]

If we define man as "body and soul hitched together," we are giving a kind of real definition, a definition that reveals the metaphysical structure of the thing itself. But if we define man as either " a body animated by a soul" or "a soul governing and ruling a body," we are not giving a real definition. We are not by those expressions revealing the internal metaphysical structure of the body that is the man, or of the soul that is the man. All we are doing instead is saying under what conditions the term 'man' applies to that body or that soul — and that is a far broader notion. We can do that, as we are here, without saying anything about the inner structure of the thing the term 'man' is applied to. It is in this sense, then, that nominal definitions are "nominal." They are about words in a way that real definitions are not.

In *Summa of Logic* I.26, where Ockham is discussing definitions, he does not give us a very full account of how we tell whether what we have is a nominal definition or not. He has much more to say about it in Ch. 10. There it seems what is going on is something like this:

i. Expressions Expressing the *Quid Nominis*

We start with the notion of an expression expressing the *quid nominis* of a name. This is not yet the notion of a *definition* expressing the *quid nominis* (= a "nominal definition"); that will be a narrower notion. Here we have the much broader notion of *any* expression that tells us when we can apply a given name.

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[43] Ockham's own example (*Summa of Logic* I.27, § 4) is 'biped having two hands'.

[44] See p. 207 above.

[45] See pp. 191–195 above.

The principle Ockham uses in Ch. 10 is this: If a term has only one such expression expressing its *quid nominis* (or only "equivalent" ones in some sense yet to be pinned down), then it is a connotative term, and that expression is (or those equivalent expressions are) a "definition" expressing the *quid nominis* of the term — that is, its nominal definition. This is both a necessary and a sufficient condition.

On the other hand, if a term has several non-equivalent such expressions expressing the *quid nominis*, then the term is absolute. It does not have a nominal definition, although it may have a real definition.

Ockham gives an example in *Summa of Logic* I.10, § 3: the absolute term 'angel'.[46] He tells us there that 'angel' is an absolute term, provided we mean the "substance" and not the "job" of the angel. (Etymologically, 'angel' comes from a Greek word meaning "messenger," so that the term might be taken as a kind of job-description. That's what Ockham means to be ruling out here; in the example, he means to be using 'angel' to talk about a particular kind of immaterial substance, not a particular function it performs.)

There are, Ockham says, several expressions expressing equally well the *quid nominis* of the term 'angel'. For example: 'substance abstracted from matter', 'intellectual and incorruptible substance', 'simple substance that does not enter into composition with anything else'. Each one of these expressions in some sense explicates what the term 'angel' signifies. It tells you under what conditions you can apply the term 'angel' to something, and in that sense expresses its *quid nominis*, the "what of the name."

This does not mean that all these expressions signify just exactly what the term 'angel' signifies, since they don't. They signify more. In virtue of the Additive Principle[47], which says that a complex expression signifies the sum total of what its categorematic constituents signify, these expressions signify all substances, for instance, and other things besides, not just angels.

These expressions, Ockham tells us, fail to be equivalent (that's my word, not Ockham's) in the sense required if the term 'angel' is to have a nominal definition. And since they so fail, 'angel' has several *non*-equivalent expressions expressing its *quid nominis*, and so is an absolute term.

Now what exactly is the "equivalence" that is involved here? Well, look at what Ockham says in *Summa of Logic* I.10, § 2:

> For, properly speaking, for a name that has a definition expressing what the name means [= the *quid nominis*, here and throughout the passage], there is only *one* definition explicating what the name means — that is, in such a way that for such a name there are not several expressions expressing what the name means [and] having distinct parts, one of which signifies something that is not con-

[46] As it turns out, this is an unfortunate example, since the term 'angel' will probably turn out to be connotative, for reasons we shall see on p. 232 below. But never mind, it is the example he gives.

[47] See Ch. 6, p. 166, above.

> veyed in the same way by some part of the other expression. Instead, such names, insofar as what they mean is concerned, can be explicated after a fashion by several expressions that do not signify the same things by their parts. And so none of those [expressions] is properly a *definition* expressing what the name means.

It appears from this passage, then, that the expressions expressing the *quid nominis* of a term are "equivalent" in the sense required for a nominal definition iff they all signify *the same things in the same way*.

It's not yet clear what this "conveyed in the same way" business is. But, although I will have some suggestions below about how to interpret it, for the present we don't need to know; we can unpack it another way:

If you look at *Summa of Logic* I.6, § 1, Ockham tells us that in the sense of 'synonym' he normally uses, two terms are synonyms iff they:

> … simply signify the same thing in all ways, so that nothing is signified in any way by the one [synonym] unless it is signified in the same way by the other.

It is tempting, and I think probably correct, to view the "ways" of signifying here in Ch. 6 with the "ways" of "conveying" in Ch. 10. If that is so, then whatever the "ways of signifying" are here,[48] it looks as if the expressions expressing the *quid nominis* of a term are "equivalent" in the sense required for a nominal definition iff they are synonymous. And we already have an account of synonymy in terms of subordination to the same concept.[49]

Here then is what we have: If all expressions expressing the *quid nominis* of a term are synonymous, then the term is connotative and those expressions formulate the nominal definition of the term. If they are not all synonymous, the term is absolute, and may or may not have a real definition, depending on the particular case. And since we have an independent account of synonymy, it looks as if everything is in order.

Thus suggests a big question, however. Since it appeared that there is no synonymy in mental language,[50] does mental language itself have connotative terms in it? We will return to this question shortly, but first let us finish the business at hand.

In the case of the spoken term 'angel', we have the expressions 'substance abstracted from matter', 'intellectual and incorruptible substance' and 'simple substance that does not enter into composition with anything else', all of which express the *quid nominis* of the term. Those expressions are obviously not synonymous; they are not subordinated to the same concept in the mind.

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[48] They are not the four "ways" or "modes" of signifying in *Summa of Logic* I.33 (see Ch. 5, pp. 150–151, above), since, without further refinement, those would not give us synonymy.

[49] See Ch. 4, pp. 97–105, above, and recall that there are some difficulties with this notion of synonymy. We will discuss them soon.

[50] *Ibid.*

On the other hand, take the paradigmatic connotative term 'white'. It will have, Ockham says (*Summa of Logic* I.10, § 5), the following expressions expressing its *quid nominis*: 'something informed by a whiteness', 'something having a whiteness," etc.[51] These expressions, he goes on, do signify the same things "in the same way." Hence they are synonymous, and are subordinated to the same concept. As a result, the expressions are nominal definitions of the term 'white', which is therefore a connotative term.

(A) Identifying Which Expressions Express the *Quid Nominis*

All of this seems to work out nicely, provided we have a way to tell which expressions do in fact express the *quid nominis* of a given name. How do we do that? Well, I'm afraid Ockham doesn't give us a very good account here. But we can get at least some idea of what is involved.

The basic idea, recall, is that an expression expressing the *quid nominis* of a name is supposed to give us the conditions under which we can apply that name to a given thing. This suggests that if we have a simple term *t* and a complex expression *t*,* and we want to test whether *t** expresses the *quid nominis* of *t,* one necessary condition is that the following hold:

For all *x, x* is a *t* iff *x* is a *t**.

Of course this condition is probably going to be too weak, since it is satisfied whenever the simple term *t* and the complex expression *t** just happen to be coextensive, as occurs for example with 'the number of planets' and '$\sqrt{81}$'. As a result, we may want to try the stronger condition, that the above be not only true but *necessarily* true:

Necessarily, for all *x, x* is a *t* iff *x* is a *t**.

I think that is certainly a necessary condition too, but still not a sufficient condition. For consider so called *figmenta*, "figment"-terms. These are terms for impossible objects. For example, 'chimera' and 'vacuum'. It is important for my point that these be names for *impossible* objects, not just names that happen to be non-denoting.[52] Ockham explicitly tells us (*Summa logicae* II.14[53]) that all figment-terms are connotative. Hence, they will all have nominal definitions. And

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[51] Note that, by inserting the pronoun 'something', Ockham appears to have left himself wide open to Anselm's objection here. Recall that for Anselm there can be no term for the bearer of whiteness here. See p. 203 above.

[52] Given mediaeval physics, it is relatively easy to see why vacua were thought to be impossible. It is harder to see why chimeras were thought be impossible too, and not just non-existent. But they were.

[53] See William of Ockham, *Ockham's Theory of Propositions*, Freddoso and Schuurman, trans., p. 122.

therefore, if what we have said so far is correct, all the expressions expressing the *quid nominis* of any given figment-term will be synonymous with one another.

But figment-terms are not truly predicable of anything at all, and this fact is necessarily so, since we are talking about figment-terms and not just non-denoting terms.[54] Now if being necessarily coextensive were a sufficient condition for a complex expression to express the *quid nominis* of a simple term, then whatever complex expression expressed the *quid nominis* of one figment term would express the *quid nominis* of all figment terms alike. Hence the nominal definitions of all figment terms would by synonymous with one another.

But that is not so. The nominal definition of 'chimera' is 'animal composed of a goat and an ox',[55] whereas the nominal definition of 'vacuum' is 'place not filled with a body', or something like that,[56] and those expressions are not synonymous. The latter, for instance, signifies all bodies in virtue of the Additive Principle,[57] whereas the former does not.

So being necessarily coextensive is not enough. In my paper, "Ockham's Distinctions between Absolute and Connotative Terms,"[58] I suggest a kind of hybrid formula that seems to avoid these problems:

> A complex expression *t** expresses the *quid nominis* of a term *t* iff either **(a)** *t** is synonymous with *t,* or else **(b)** *t** signifies nothing secondarily and the proposition 'For all *x, x* if (a) *t* iff x is (a) *t**' is necessary.[59]

This formula appeals, of course, to the notion of secondary signification, which we still have to discuss. But even before doing that, we can see how the formula will work. For whatever secondary signification is, we already know that all and only connotative terms have it.[60] Furthermore, as we shall see in a few moments, there is reason to believe that, for Ockham, not only are all the expressions expressing the *quid nominis* of a connotative name synonymous with one another, they are also synonymous with the connotative name itself.

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[54] Figment-terms are the exceptions I promised above (p. 205) to the claim that all connotative terms signify *some things primarily* and some things secondarily.

[55] *Summa of Logic* I.26, § 18. But later on in the paragraph, Ockham substitutes 'a man and a lion' for 'a goat and an ox'. My point remains unaffected.

[56] In *Summa logicae* II.14 (Freddoso and Schuurman, trans., p. 122), Ockham tells us that 'vacuum' is connotative, but he does not provide any nominal definition for it. I have taken this one from John Buridan, *Sophismata* I, the discussion of conclusion 11 (Scott ed., p. 30; Scott trans., p. 76): "Hence, because of this, the expression 'place not filled with a body' should be the description giving the *quid nominis* of 'vacuum'. It does not indicate which thing *is* a vacuum but which things and how the name 'vacuum' signifies." (I conjecture that Scott's 'description' should read 'definition', but a decision on that will have to wait on the new edition of the text.)

[57] See Ch. 6, p. 166, above.

[58] Spade, "Ockham's Distinctions between Absolute and Connotative Terms," p. 75.

[59] As often, I put the articles 'a' in parenthesis, since Latin doesn't have them and since English uses them only when *t* and *t** are nouns, not adjectives.

[60] See p. 205 above.

If this is so, then clause **(a)** of the above formula will apply to all connotative names. That is, since connotative names have nominal definitions for Ockham, and since nominal definitions work the way we have described, we know there will be complex expressions synonymous with a given connotative name, and they will all express the *quid nominis* of the name. Since connotative names always signify something secondarily, clause **(b)** will not apply to them, so that no additional expressions will end up expressing the *quid nominis* of a connotative name in virtue of clause **(b)**. Thus, all expressions expressing the *quid nominis* of a connotative name will be synonymous with one another, which is exactly what we want.

On the other hand, since absolute terms don't signify anything secondarily, clause **(b)** is for them. An expression *t** can express the *quid nominis* of a term *t* in virtue of clause **(b)** without being synonymous with *t,* which again is exactly what we want. And since clause **(b)** does not apply to connotative names, figment-terms do not pose any special problem.[61]

I think the above formula will give us the right results, even though we will not be in a position to know how to apply it in practice until we know more about secondary signification.[62] But it must be admitted that it is pretty much of a hybrid, and has little to recommend it except that it will probably work. I emphatically do not, for example, suppose that something like this formula is what Ockham "really had in mind," but just didn't have the courtesy to tell us. My reason for offering it is simply to make the point that the notion of an expression expressing the *quid nominis* of a name is not something we have to leave at the level of sheer mystery. As for what Ockham "really" meant by that notion, well he simply didn't tell us, and that's that.

Given the above formula, we now have — pending an account of secondary signification — a way of determining which expressions express the *quid nominis* of a given term. Since we already have an account of when such expressions, and expressions in general, are synonymous (they are subordinated to the same mental expression), this will put us in a position to say which terms have nominal definitions and which do not and, on the basis of that in turn, to say at last which terms are connotative and which are absolute. This, then, seems to be roughly Ockham's strategy for drawing the distinction.

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[61] See Spade, "Ockham's Distinctions," pp. 75–76, for a further discussion of how the above formula works, and in particular for a rather exotic discussion of whether clause **(a)** applies to certain absolute names as well as connotative ones. (It doesn't matter for the purposes of the formula, but it is an interesting question.)

[62] In practice, we cannot avoid dealing with secondary signification, as we just did, by saying that whatever it is, only connotative names have it, so that the necessary equivalence in clause **(b)** only matters for absolute names. That strategy is fine for convincing ourselves that the formula will give the right results, but we can't actually *get* those results yet because we don't yet know which names are connotative. We won't know that until we know which names have nominal definitions and which do not. And we do not know that latter until we know whether all the expressions expressing the *quid nominis* of the name are synonymous or not. But we cannot know that in turn until we know which expressions do express the *quid nominis* of the name, which is just what the formula itself is supposed to tell us.

c. A List of Connotative Terms

Well then, which terms *are* connotative? Ockham lists several different kinds, in several different places:

1. All figment-terms.[63]
2. Negative terms (*e.g.*, 'immaterial'), privative terms (*e.g.*, 'evil'), and "infinite" terms (*e.g.*, 'non-man').[64]
3. All relative terms (*e.g.*, 'similar', 'father').[65]
4. "According to" some people (including Ockham himself),[66] quantitative terms, and in fact all terms in categories other than substance and quality.
5. 'True', 'good', 'one' — as transcendental terms[67] — 'power', 'act', 'intellect', 'intelligible' 'will', 'volible', etc.[68]
6. Concrete terms "of the first kind."[69]

2. The Secondary Significates of Connotative Terms

To complete this part of our story, we need to say something about the notion of secondary signification.

In "Ockham's Distinctions between Absolute and Connotative Terms,"[70] I argued that there are textual reasons to suppose not only that all the expressions expressing the *quid nominis* of a connotative name are synonymous with one another, but also that the connotative name itself is synonymous with each one of them.[71] The textual evidence is far from decisive, to be sure, and in fact Claude Panaccio has argued forcefully against my claim on the grounds that it leads to

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[63] *Summa logicae* II.14, Freddoso and Schuurman, trans., p. 122.

[64] *Ibid.* II.12, Freddoso and Schuurman, p. 119.

[65] *Summa of Logic* I.10, §§ 8–9. "Relative" terms in this sense are not names for relations, but rather names for one or another pole of a relation.

[66] *Ibid.*, §§ 10–11.

[67] See n. 42 above.

[68] *Summa of Logic* I.10, § 12–13.

[69] *Ibid.*, § 7. The reference to "kinds" of concrete terms is to Ockham's extremely subtle discussion of the various kinds of differences between concrete and abstract names. See *ibid*., I.5–9, and *Quodlibet* 5, q. 9. That discussion repays careful study, but I don't want to digress for it here.

[70] Spade, "Ockham's Distinctions," pp. 66–67.

[71] In that case, a connotative name works like a kind of "shorthand abbreviation" of its nominal definition, just as for Anselm.

trouble when we consider the possibility of connotation in mental language.[72] We will consider his arguments shortly, but for the present note that, in addition to the inconclusive texts, there is another, very powerful reason for supposing connotative names are synonymous with their nominal definitions: If they are not, then what counts as being a correct nominal definition of a name? In the case of real definitions, of absolute terms, there is presumably another way the matter is settled, since real definitions are supposed to have something to do with the inner metaphysical structures of things, and we either get that right or we don't. But that kind of link with metaphysical objectivity is absent for nominal definitions. Something else needs to take its place. If it's not synonymy, then what is it?[73] Panaccio has no suggestions here. Note that our earlier formula for finding which expressions express the *quid nominis* of a name[74] will not help here. That is, we cannot just say all we have to do is use that formula to find out which expressions express the *quid nominis* of a given name, and then if all those expressions are synonymous with one another we have a connotative name and those expressions are nominal definitions of it, while if not then we have an absolute name. For that formula presupposes the synonymy of connotative names with their nominal definitions, and so cannot be used as a substitute for that synonymy.

For the time being, then, we will take it that connotative names are synonymous with their nominal definitions. We'll discuss the objections later.

Now we already know, in virtue of the Additive Principle, that a complex expression will signify just the sum total of what its categorematic constituent terms signify. In particular then, a nominal definition of a name will signify just the sum total of what its categorematic constituents signify. Since we are regarding a connotative name as synonymous with its nominal definition, it follows then that the connotative name will likewise signify just the sum total of what the categorematic constituent terms in its nominal definition signify, because synonyms "signify the same things in all ways."[75] The things it signifies that it is also truly predicable of it signifies primarily.[76] But which things does it signify secondarily?

It is tempting to say simply: *all the rest*. That is, to put it as a quasi-mathematical formula: *Secondary signification = signification – primary signification.*

But that will not work. For consider a transcendental name like 'one'. Ockham explicitly says this is connotative (*Summa of Logic* I.10, § 12). But since it is transcendental, it is truly predicable of absolutely everything[77] — whatever is is one. Hence there will be nothing left over for it to signify secondarily, if we

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[72] Panaccio, "Connotative Terms in Ockham's Mental Language." Martin Tweedale, in his "Ockham's Supposed Elimination of Connotative Terms and His Ontological Parsimony," also argues against the synonymy of connotative terms with their nominal definitions, but on quite different grounds.

[73] I owe this consideration to Professor Calvin Normore.

[74] See p. 213 above.

[75] *Summa of Logic* I.6, § 1. See p. 211 above.

[76] See p. 205 above.

[77] See n. 42 above.

accept the suggested formula. It will signify everything primarily and nothing secondarily. But this means it will be an absolute name,[78] not a connotative one, in explicit violation of what Ockham says.

So this simple and tempting suggestion will not work. Nevertheless, it is the view Loux ascribes to Ockham in his "The Ontology of William of Ockham."[79] This is what I meant when I said at the beginning of this chapter that the theory of connotation Loux presents is not Ockham's. It fails to be Ockham's theory for rather technical reasons involving transcendentals, to be sure, but the reasons are Ockham's own, not ones I just made up myself.

a. Buridan's Account

Nevertheless, if the theory Loux attributes to Ockham is not quite his, it does seem to be what Buridan had in mind. Consider his statement (Text **(72)**):

> For first it must be known that a term [that is] naturally apt to *supposit for* something is said to *appellate* everything it *signifies* or *consignifies* besides what it supposits for, unless it is *restricted* …

I have italicized the technical terms here: 'supposit for', 'appellate', 'signifies', 'consignifies' and 'restricted'. We already know about signification in general; Buridan has nothing especially novel to add here. As for 'appellate', it is a curious terminological fact that Buridan (and some of his followers) regularly use 'appellation' for what other authors mean by 'connotation'. I do not know the explanation for this oddity, but I'm sure there is one.[80] For practical purposes, just read the word as "connotation."

We have already talked a little about "supposition," in Ch. 5.[81] Let us look at it a little more closely.[82] In Ch. 3 of his *Sophismata*, Buridan says[83]:

> Now supposition, as it is taken here, is the taking of a term in a proposition for something or for some things that, when it is indicated or they are indicated by the pronouns 'this' or 'these', or

[78] See p. 205 above.

[79] Loux, "The Ontology of William of Ockham," p. 7.

[80] We have already met the notion of appellation in Priscian and Anselm, but there is meant something quite different — what Ockham would call "primary signification." Ockham too uses the term 'appellation', but again in a quite different sense. See *Summa of Logic* I.63, § 2, and I.72, § 13). For a thorough discussion of the word, see Maierù, *Terminologia logica della tarda scolastica*, Ch. 1. Note that Scott's translation of Buridan's *Sophismata* renders forms of 'appellate' by forms of 'connote'. I think that is doctrinally correct, although it obscures the terminological point.

[81] See Ch. 5, pp. 140–145, above.

[82] We will look at it *much* more closely in Chs. 8–10 below.

[83] John Buridan, *Sophismata,* Ch. 3, Scott ed., p. 50; Scott trans., pp. 99–100.

> [words] equipollent to them, the term is truly affirmed of the pronoun by means of the copula of the proposition.

The passage is perhaps needlessly complicated by Buridan's scrupulous concern to allow both for cases where a term supposits for only one thing and for cases where it supposits for more than one. But when you boil it down, all he is saying is that a term in a proposition supposits for what it can be truly predicated of.[84] Ockham gives a similar explanation in *Summa of Logic* I.63, § 3:

> Supposition is so called as, so to speak, a "positing for another," in such a way that when a term in a proposition stands for something, so that we use the term for something of which (or of a pronoun pointing to it) that term (or the nominative of that term, if it is in an oblique case) is verified, it supposits for that [thing]. At least this is true when the suppositing term is taken significatively.

The last sentence, about being "taken significatively" just means in effect that this is true with respect to so called "personal" supposition, which is the only kind that concerns us for now. A term thus supposits for what it is truly predicable of. In short, the kind of supposition involved here is what we have already called "primary signification."[85]

As for "consignification" in Text **(72)**, the *locus classicus* for this notion is Aristotle, *De interpretatione* 3, 16^{b}6: "A verb is what consignifies time." The Greek here is 'προσσημαῖνον', and the Latin translation reads *'consignificat'*. The idea is that a verb had built into it an implicit reference to time, either the present, past or future time, depending on the form of the verb. But "consignification" came to be taken in a broader sense than that. Basically, it means anything that is signified in addition to (*con* + *signify* = signify together with) what the term is truly predicable of. In Buridan, I think consignification is the same thing as connotation, and that the relation is a sub-relation of signification in general. Putting all this together, it appears that when Buridan says (Text **(72)**):

> a term [that is] naturally apt to supposit for something is said to appellate everything it signifies or consignifies besides what it supposits for, unless it is restricted …

he is in effect saying that CONNOTATION = SIGNIFICATION − SUPPOSITION, which — given the link we have just seen between supposition and what Ockham calls "primary signification" — is just the theory Loux wrongly attributes to Ockham.

Buridan adds the proviso 'unless it is restricted' at the end of the passage. This refers to the kind of thing that is going on in, for example, the phrase 'tall man' in the proposition 'John is a tall man'. The term 'man' doesn't connote any-

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[84] The business at the end about 'the copula of the proposition' is meant to accommodate tense and modality. But we needn't delay over those factors here; we will talk about them in Ch. 10 below.

[85] See p. 205 above.

thing; it is an absolute name, and so can supposit for — be truly predicated of — everything it signifies. Nevertheless, in the phrase 'tall man' we can think of the supposition of the term 'man' as "restricted" by the term 'tall' so that 'man' now supposits in the proposition only for some men — the ones who are tall.

From this point of view, adjectives (and certain relative clauses) affect the supposition of the nouns they modify. But there is another way of looking at the situation too, one that is more common and that Buridan himself seems to use more frequently. According to this other point of view, it is the whole composite term 'tall man' that has supposition in the proposition for exactly the tall men. The term 'man' also supposits there (for all men), and so does the term 'tall' (for tall men, tall trees, tall mountains, tall buildings and in general for all tall things of any kind). Each of those component terms contributes to the supposition of the complex term 'tall man'. In this particular case, the supposition of 'tall man' is simply the "intersection" of the supposition of 'tall' and the supposition of 'men', but in other cases the contributions of the components will not be so easy to describe.

In effect, restriction is something we don't have to worry about, and we can safely ignore the last clause in Buridan's statement.

Buridan nowhere, so far as I have found, gives an account of how to tell what all a term signifies. Of course it will signify whatever it can be truly predicated of. But if it is connotative, it will signify other things too, and Buridan gives us no way to tell what things they are. This is what Ockham does with his view, as I interpret him, that connotative terms are synonymous with their nominal definitions, and so signify exactly what the latter do — namely, the sum total of what their categorematic constituents signify.

b. Ockham's Account

But if Ockham does not think of secondary signification in the way Loux says he does, then how does he think of it? Well, just as Ockham has really very little to say explicitly about how to pick out the expressions that express the *quid nominis* of a name, so too he has very little to say about what secondary signification is. Nevertheless, what little he does say is suggestive. For example, *Summa of Logic* I.10, §§ 1 and 5:

> [The absolute term 'animal'] does not signify one [animal] primarily and another one secondarily in such a way that something has to be signified in the nominative and [something] else in an oblique [case]. Neither in the definition expressing what the name means [= the *quid nominis*] do there have to occur such distinct [terms] in different cases, or an adjectival verb.[86] … But a connotative name is one that signifies something primarily and something secondarily. Such a name does properly have a definition express-

[86] An adjectival verb is any verb besides the forms of 'to be'; the latter was called a "substantival verb."

> ing what the name means. And often you have to put one [term] of that definition in the nominative and another [term] in an oblique case.

I am not sure what to do with the clause about an "adjectival verb." But note the talk at the beginning of the passage, about something's being signified in various grammatical cases. The only way I can make sense of this is to suppose that a term signifying *x* and occurring in an expression in grammatical case *c* can be said to signify *x* in that expression "in case *c.*" So too, any term synonymous with that expression can be said to signify *x* in case *c,* since synonyms "signify the same things in all ways."[87]

Given this, and disregarding for the moment the business about adjectival verbs, the passage just quoted at least suggests the following criterion: *A name secondarily signifies x iff it signifies x in some oblique case*.

Thus, if *t* is a connotative term and *t** is a "fully expanded" nominal definition of it,[88] then *t* will secondarily signify exactly what is primarily signified by the categorematic terms that occur in *t** in an oblique case.

Ockham himself gives an example, immediately following the second part of the passage just quoted, of how these "oblique cases" occur in nominal definitions:

> This happens for the name 'white'. For 'white' has a definition expressing what the name means [= the *quid nominis*], in which one word is put in the nominative and another one in an oblique case. Thus, if you ask what the name 'white' signifies, you will say that [it signifies] the same as [does] the whole expression 'something informed by a whiteness' or 'something having a whiteness'. It is clear that one part of this expression is put in the nominative and another [part] in an oblique case.

In the Latin, 'whiteness' (*albedo*) is in the ablative case in the first definition, and in the accusative in the second, and those are both "oblique" cases (that is, cases other than the nominative).

The criterion I suggested for secondary signification would seem also to be at work, with another added clause about verbs, in the following passage[89]:

> Connotative [names] are defined by their subjects taken in the nominative and by the names of their *connotata* taken in an oblique case, or by verbs. For example, quantity is defined as fol-

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[87] *Summa of Logic* I.6, § 1. See p. 211 above.

[88] By a "fully expanded" nominal definition, I mean one that contains no simple connotative terms; any such connotative terms have been replaced by their nominal definitions, and so on, until the only simple terms occurring in the definition are absolute terms. Unless we are going to allow definitional "circles" or infinite regresses of definitions, this will always be possible in principle.

[89] *Summa logicae*, III-3.26.40–45.

> lows: 'Quantity is a thing having parts'. Continuous permanent quantity can be defined as follows: 'Permanent continuous quantity is one thing, having a part outside a part'.[90] But the white is defined as follows: 'The white is a body having a whiteness'. And so on.

But the situation is complicated both theoretically and textually. Consider figment-terms once again. They are truly predicable of nothing at all, so that they do not primarily signify anything. Therefore, whatever they signify they signify secondarily. If the above criterion were correct, this would mean that no absolute term occurring in the nominal definition of a figment-term could occur there only in the nominative case. But that is not so. Ockham tells us that the nominal definition of 'chimera' is 'animal composed of a goat and an ox',[91] and 'animal' occurs there in the nominative case only.

But worse, Ockham himself goes on immediately after the passage just quoted, to say[92]:

> Privations and negations are defined through the positive [names that are] their opposites. For example, blindness is defined through sight. [And] non-man is defined through man, as 'a thing that is not a man'.

Here privative and negative terms are being contrasted with connotative terms. Yet earlier they were included under connotative terms.[93] And in fact, if the theory we have been developing so far is anything close to correct, then 'non-man' certainly *is* connotative if 'a thing that is not a man' defines it. For that definition signifies all men, and indeed all things, in virtue of the Additive Principle, but 'non-man' is plainly not predicable of men, much less of all things! Hence not everything it signifies does it signify primarily.

But if 'non-man' is a connotative term defined by 'a thing that is not a man',[94] then our suggested criterion for secondary signification fails miserably. For here is a connotative term, which must therefore signify some things secondarily, and yet *all* the terms in its nominal definition are in the nominative case.[95]

I'm afraid Ockham leaves us in the lurch here, and doesn't really say much more to help us pin down what secondary signification is. Nevertheless, as with the problem of determining which expressions express the *quid nominis* of a name, so too here: I have a kind of hodgepodge formula that seems to give the

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[90] Do not worry about the strangeness of these definitions. On Ockham's theory of quantity, see Adams, *William Ockham*, Ch. 6.

[91] *Summa of Logic* I.26, § 18. See p. 213 above.

[92] *Summa logicae*, III-3.26.46–48.

[93] *Summa logicae,* II.12, Freddoso and Schuurman, p. 119. See p. 215 above.

[94] Note that this definition is "fully expanded"; it contains no connotative terms.

[95] Moreover, the only verb in the definition is the verb 'is', which is not an "adjectival" verb.

right results, even though I do not for a moment suppose this is what Ockham was thinking of.

The formula is a simple combination of Buridan's theory with the criterion I suggested (and rejected) for Ockham. Here it is:

> A name *t* secondarily signifies *x* iff either **(a)** *t* signifies *x* in some oblique case, or else **(b)** *t* signifies *x* but not primarily.

Clause **(a)** accommodates transcendental terms, which were a problem for applying Buridan's theory to Ockham. And clause **(b)** accommodates figment-terms as well as terms like 'non-man', which were a problem for the earlier criterion I suggested for Ockham's theory.[96]

This disjunctive formula is messy and obviously *ad hoc,* but there is nothing to be done about that. It says nothing about verbs, which were apparently on Ockham's mind in this connection, since we have seen him mention them twice in the passages quoted above. But I can't think of any good way to incorporate verbs into our account. The best I can say is that this formula seems to work. So, unless someone can show me a case for which it gives the wrong result, let's adopt it — not with the idea that this is what Ockham meant, but that whatever Ockham meant, there is at least one way (this one) of filling out his theory so that it will give a complete story.

That story can now be told. We start with the notions of true predication (giving us primary signification), and synonymy (subordination to the same concept). In terms of those notions, and a little grammar, we can define the notion of secondary signification, as above. From there we can go on to define the notion of "expressing the *quid nominis*" of a name, in the way we did earlier.[97] Once we have that, we can determine which such expressions are nominal definitions and which are not (since an expression expressing the *quid nominis* of a certain name is a nominal definition of it if and only if all the expressions expressing its *quid nominis* are synonymous). And on the basis of that, we can decide finally which names are connotative and which are absolute.

3. A Generalization and Some Conclusions

So far we have been talking about the distinction between absolute and connotative names as if it were a division of simple names only — that is, of one-word names rather than phases or whole complex expressions. And in fact that is the way Ockham himself presents it. In *Summa of Logic* I.2, § 4, Ockham tells us that complex expressions can be counted as "terms," but then in I.3, § 1, he says he is going to turn to various divisions among "non-complex" terms. That narrower focus seems to be still in effect in I.10, where he introduces the distinction

[96] For a further discussion of this suggestion, see my "Ockham's Distinctions between Absolute and Connotative Terms," pp. 71–73.

[97] See p. 213 above.

between absolute and connotative names. And in fact it seems to be in effect throughout the rest of Part I of the *Summa logicae*.

Nevertheless, there is nothing to prevent our generalizing the distinction. The semantic relationships will be exactly the same, even if our terminology is a little broader than Ockham's.

For example, just as the term 'white' is connotative and has as a nominal definition 'something having a whiteness', so too we can say that the complex expression 'something having a whiteness' is itself a connotative term too. It is certainly not absolute, because in virtue of the Additive Principle it signifies all whitenesses, and yet it cannot be truly predicated of whitenesses. Hence some of the things it signifies it does not signify primarily. This makes it connotative (on both Ockham's account and Buridan's).

In a sense, the expression 'something having a whiteness' would be a "degenerate case" of a connotative term, in the sense in which a circle is a "degenerate case" of an ellipse or a square a "degenerate case" of a rectangle. It would perhaps be a little odd as a connotative term, since *it would be its own nominal definition.* But there is nothing really wrong with that.[98]

If we do allow the distinction between absolute and connotative names to apply to complex expressions too, then we can say:

(1) Nominal definitions of connotative terms are themselves connotative terms, and are their own nominal definitions.

(2) Real definitions of absolute terms are also themselves connotative terms, and are their own nominal definitions. For instance, 'rational animal' signifies all animals, and yet is truly predicable only of men. Hence it is a connotative term.

Hence

(3) Absolute terms are not synonymous with their real definitions. (Since those real definitions are connotative terms, all the expressions expressing their *quid nominis* are synonymous. Thus, if an absolute term were synonymous with its real definition, it would also be synonymous with all those other expressions, and would therefore express its

[98] Claude Panaccio, "Connotative Terms in Ockham's Mental Language," pp. 6–7, takes me to task here, since Ockham explicitly says (*Summa of Logic* I.26, § 15, and other passages cited by Panaccio) that definitions are not the same as the terms they define. But this is purely a terminological matter, and only reflects the fact that Ockham is thinking mainly of simple terms in these passages. (He is thinking of them as the *definienda* — the definitions will of course be complex.) As I said, the semantic facts of the situation are not affected one bit by the terminology. I find that the broader terminology makes it somewhat easier for me to keep track of those semantic facts, but you may disagree.

> *quid nominis* too. Hence the term would be connotative, not absolute after all.[99])

C. Connotation in Mental Language

Is there connotation in mental language? Well, if we allow complex expressions to count as connotative terms, then of course there is. The real question is rather whether there are simple ("one-word") connotative names in mental language.

The way Ockham proceeds in Part I of *Summa of Logic* would indicate that there are. We have already seen[100] that Ockham seems to introduce the distinction between absolute and connotative names as a division among simple terms (even if we can apply that distinction more broadly). Now in *Summa of Logic* I.3, § 1, he indicates that he is about to begin discussing a series of distinctions that apply to mental language as well as to spoken and written language:

> Thus, not only is the non-complex term divided into the spoken, written and conceived term. Each branch is also subdivided by similar divisions.

That is, the three "branches" — spoken, written and mental language — are subdivided in parallel ways. In Ch. 10, he discusses absolute and connotative names. Then at the beginning of I.11, § 11, he says:

> Now that we have set out the divisions that can belong both to terms signifying naturally [that is, mental terms] and also to terms instituted by convention, we have to talk about certain divisions that belong [only] to terms instituted by convention.

This doesn't quite say, but plainly implies, that the distinction among simple terms introduced in the immediately preceding chapter, between absolute and connotative names, does indeed apply to mental language.

But there's stronger evidence than that. Ockham, Buridan and Peter of Ailly all quite explicitly say there are simple connotative terms in mental language. Indeed, they all give exactly the same example: the term 'white'. The fact that all three give the same example suggests it is not mere coincidence or a momentary slip on their part; they meant it. Here is what Peter of Ailly says (Text **(80)**):

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[99] The same point can be argued another way, without applying the notion of connotative terms to complex expressions. Since real definitions proceed by genus and difference, and since the genus is always broader than the species defined, it follows by the Additive Principle that a real definition will always signify things the defined term is not truly predicable of. But since absolute terms only signify primarily — that is, only signify what they are truly predicable of — it follows that absolute terms cannot be synonymous with their real definitions.

[100] See p. 222 above.

> First, because many people maintain, and it is quite arguable, that the concept the utterance 'white' corresponds to is a simple act of knowing. Nevertheless, it is equivalent in signifying to several acts of knowing. For it signifies whatever its nominal definition and any part of [its nominal definition] signifies.

'White' is a paradigm of a connotative term, and yet here Peter is saying it is highly probably that it corresponds to a simple connotative concept, although he gives no argument.

Buridan says it in his *Sophismata*, Ch. 1, the sixth conclusion, although he doesn't give an argument either[101]:

> To this it is to be replied by positing this sixth conclusion: A simple concept, if it is the subject or predicate in a mental proposition, supposits for the very thing that is conceived by it. For there is nothing that forbids this, unless perhaps in two cases. The first one is that the thing be conceived after the fashion of what is added to something else, as would hold for the concept from which the name 'white' is taken. For it could be said that whiteness is conceived by [that concept] and yet [the concept] does not supposit for whiteness but for the subject to which [whiteness] is added, because it is understood after the fashion of what is added.[102]

The concept here is the one "from which the name 'white' is taken" — that is, the one to which the spoken or written term 'white' is subordinated. It is said to be a simple concept, and yet described in a way that fits only connotative terms.

Ockham makes the claim in *Quodlibet* V, q. 9, and actually gives an argument (Text **(52)**, § 6):

> The reason for this is that the same mental proposition cannot be true and false together, whatever the case is for a spoken proposition. But the proposition 'A man is white' is true in the mind, and 'A man is a whiteness' is false. And there is no variation here except in the predicates, with respect to concrete and abstract in the first mode.[103]

The context of this passage is not important here. But note that Ockham is saying the two mental propositions have two distinct concepts "white" and "whiteness" in predicate position, and that those concepts differ only insofar as the former is the concrete form and the latter the abstract form. But the distinction between concrete and abstract names seems to apply to simple names only, for two rea-

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[101] Scott ed., pp. 26–27; Scott trans., p. 73.

[102] The text goes on to discuss the second case, which involves tenses of verbs and doesn't concern us here.

[103] This last refers to Ockham's elaborate and careful analysis of concrete and abstract names, developed earlier in the question and also in *Summa of Logic* I.5–9. See n. 69 above.

sons. First, it is discussed in *Summa of Logic* I.5–9, where simple names seem to be what are on the agenda. But second, the syntactical criterion Ockham gives for distinguishing concrete from abstract names[104] will not in general work for complex expressions. Hence, it looks as if there is a simple concept "white," a paradigm of a connotative term.

But notice that Ockham's argument, if you look at it carefully, begs the question. He starts out by talking about the mental propositions "A man is white" and "A man is a whiteness." And he says these mental propositions differ only insofar as one has a concrete predicate and the other an abstract one. But that of course is just the question at issue. What we should be talking about instead is the mental propositions *corresponding* to the *spoken* (or written) propositions 'A man is white' and 'A man is a whiteness'. And if we make that adjustment, Ockham's argument won't work.

He is right to say that there must be two mental propositions corresponding to the two spoken propositions, since the one spoken proposition is true while the other is false. And he is perhaps also right that, since the rest of the spoken propositions are the same, the difference in the mental propositions must come in their predicates.[105] But in any event he is wrong to infer that the predicate of the one mental proposition is the simple concrete concept "white" and the predicate of the other is the simple abstract concept "whiteness." That needn't be so. We might have instead:

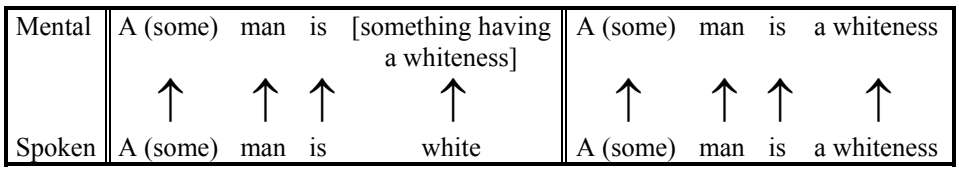

Figure 12: A Possible Subordination Relation

Here the mental predicates are not related as simple abstract to simple concrete, but as simple abstract to the nominal definition of the corresponding simple concrete. If this were the case, it would not follow that there are simple connotative terms in mental language.

Still, whether the argument is conclusive or not, the passage does indicate that, at least here, Ockham thought there were simple connotative terms in mental language.

But it is not just there. In his *Ordinatio* (a partial commentary on Peter Lombard's *Sentences* that Ockham himself corrected and prepared for circula-

[104] See p. 190 above.

[105] See Ch. 4, p. 116**,** above on the "favorable cases" in which the structure of mental propositions parallels the structures of the corresponding spoken propositions. The spoken proposition 'A man is a whiteness' is one of those favorable cases. The other proposition, 'A man is white', is more problematic, since it is *not* one of the favorable cases, in virtue of its connotative predicate.

tion), Ockham explicitly says that "God can be known by us in a *simple, connotative* and negative *concept* proper to him."[106] And a little later, in a reply to an argument that there can be several "quidditative" (here just read it as "absolute") concepts of God, Ockham says[107]:

> I say there can be several simple denominative concepts of the same thing, and this [comes about] through the diversity of their *connotata.* But there cannot be several quidditative simple [concepts of the same thing].

1. Why Ockham Cannot Have Simple Connotative Concepts

Nevertheless, I have a general argument that, at least for Ockham, this can't work; there cannot be simple connotative terms in mental language, no matter what he says. Here it is:

Suppose there are simple connotative names in mental language. Suppose, to use Ockham's own example, there is a simple connotative concept "white" and a simple absolute concept "whiteness." Then, given only minimal assumptions about our ability to form complex expressions in mental language, we would surely be able to form the complex concept "something having a whiteness," which would of course be the nominal definition of the simple concept "white." But, as we have developed the theory of connotation above, connotative terms are synonymous with their nominal definitions. Hence we have two synonyms in mental language, violating the rule that *there is no synonymy in mental language*.[108]

As it stands, the argument is incomplete. What it shows is only that we cannot have both the simple connotative concept and also the simple absolute concepts that make up its nominal definition. If for some reason we did not have the concept "whiteness," we would be unable to form the mental nominal definition of "white," and so there would be no synonymy to prevent our having a simple concept "white."

Nevertheless, from Ockham's views on how we come to acquire absolute and connotative concepts, I think it follows that whenever we have a connotative concept, we do also have the absolute concepts that make up its nominal definition. We will look at those views in a moment.

My argument is perhaps not fully decisive; we'll talk about that shortly too. Nevertheless, the conclusion of this line of reasoning is plain: There are no

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[106] Ockham, *Scriptum*, d. 3, q. 2, Brown and Gál ed., p. 405.5–6. See also p. 405.11–13. Panaccio, "Connotative Terms in Ockham's Mental Language," p. 5, brought this passage to my attention.

[107] *Ibid.*, d. 3, q. 3, Brown and Gál ed., p. 425.5–8. Panaccio, *loc. cit.*, likewise made me notice this passage.

[108] See Ch. 4, pp. 101–103 and 113 above, on this claim.

simple connotative names in mental language. All simple mental concepts are absolute; all connotative ones are composites, made up of absolute components and perhaps various mental syncategoremata.

2. Why Buridan Cannot Have Them

I also have a textual argument to this same conclusion for Buridan. (Peter of Ailly doesn't say enough about connotation for me to come up with an argument that applies to him.) Here is what Buridan says in *Sophismata*, Ch. 1, the discussion of conclusion 11[109]:

> Hence only a spoken term to which there does not correspond an incomplex concept but a complex one properly has a definition giving the *quid nominis* — that is, [a definition] precisely signifying whatever [thing or things[110]] the term signifies.

Thus if a spoken term has a nominal definition — that is, if it is connotative — then it corresponds to a complex concept, not to a simple one. Now the spoken term 'white', which is connotative, is like this, and so corresponds to a complex concept (presumably its mental nominal definition), not to a simple one. If there were also another concept "white," this time a simple one, the text would therefore imply that there is no spoken term corresponding to it. That failure of correspondence might happen by chance, of course, but the conventional character of spoken language guarantees that it will not happen as a matter of principle, as a rule, as the quoted passage would seem to require.

3. Conceptual Atomism

The picture we end up with, therefore, is a kind of "conceptual atomism," if I might call it that. Simple concepts are the atoms, and they are the absolute names of mental language. Connotative names in mental language are all "molecules," complexes put together out of the atomic concepts. At the level of mental language then, the distinction between absolute and connotative names seems to coincide exactly with the distinction between simple and compound or complex concepts.[111]

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[109] Scott ed., p. 31; Scott trans., pp. 77–78.

[110] whatever [thing or things]: *quicquid et quaecumque*. Buridan uses singular and plural pronouns, with no noun attached.

[111] There may be funny exceptions. For example, consider the atomic and therefore absolute concept "man." Now consider two occurrences of that concept, conjoined by the mental conjunction "and": "man and man," or something like that. That would be a complex concept, and yet it is absolute, because everything it signifies (namely, all men) it is truly predicable of. We can point to Socrates or Plato, for example, and say 'This is (a) man and (a) man'. (The articles don't occur in the Latin, or presumably in mental language.) It's an odd thing to say, but never mind; odd or not, it can be said and said truly. Can mental language produce such odd complex expressions? I'm not sure, but I don't see why not. (For similar considerations about a somewhat differ-

On the other hand, this neat structural distinction between absolute and connotative names breaks down for conventional language. There we can have simple names that are connotative — for example, the spoken or written term 'white'. Their being connotative is explained by their being subordinated to a complex concept. Absoluteness and connotativeness in spoken and written language, therefore, is to be explained by looking to mental language, where it is just the difference between simple and complex concepts.

Can it go the other way as well? Can we have a complex spoken term corresponding to a simple concept? Could we have the complex spoken phrase 'king of the beasts', for example, corresponding to the simple and absolute concept "lion"?

Well, if we did, then of course that whole phrase 'king of the beasts' would be absolute too, and would therefore signify only what it is truly predicable of. That is, it would signify only lions (if you think the lion really is the king of the beasts), and not all kings and all beasts, as you would expect in virtue of the Additive Principle. But this means that, despite the fact that it is written with spaces between some of the letters, the expression is not really a complex term after all. It is, so to speak, "semantically opaque," one multi-syllable simple term. Its internal structure does not count. The occurrences of 'king' and 'beast' in the expression play no semantic role, any more than does the occurrence of 'cat' in 'cattle'.

In short, the Additive Principle prevents complex spoken or written terms from corresponding to simple concepts.[112] In this connection, it is interesting to note what Buridan has to say in his *Sophismata*, Ch. 1, the discussion of that same conclusion 11[113]:

> For this reason, you need to know that on every incomplex concept there can be imposed an incomplex utterance, and on every complex [concept] a complex [utterance].[114] But also, because utterances are imposed to signify by our convention, therefore on no matter how complex a concept we can, correspondingly, impose an incomplex utterance immediately signifying that complex concept and signifying as a consequent all [the things] that are conceived by that concept. For example, a certain poet distinctly conceives by a great complex concept the history of Troy, how Paris carried off Helen, and that because of this the king of the Greeks attacked the Trojans, etc. And then the poet wrote, distinctly and complexly in correspondence with that concept, a great book signifying what are conceived by that manyfold complex concept. Next he imposed the

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ent point, see Spade, "Ockham's Distinctions between Absolute and Connotative Terms," p. 75 n. 64.) Nevertheless, let's just agree to ignore the possibility for now.

[112] See n. 111 above. The same funny cases would be exceptions here too.

[113] Scott ed., pp. 29–30; Scott trans., p. 76.

[114] The terminology is a little unusual here. Generally spoken terms are said to be imposed "to signify" such and such, but they are not usually said to be imposed *on* concepts. Nevertheless, there's nothing mysterious about the usage here.

> incomplex term ‘Iliad’ to signifying all at once however that big book signified. And so to the name ‘Iliad’ there corresponds a very complicatedly complex concept.

The example about Homer would seem to imply that whenever you hear the word ‘*Iliad*’ you automatically run through the entire story in your head, and that’s probably not so. But never mind. The important thing here is to notice what Buridan fails to mention here. He mentions simple spoken terms corresponding to simple concepts, complex spoken terms corresponding to complex concepts, and simple terms corresponding to complex concepts. But he conspicuously does *not* mention complex spoken expressions corresponding to simple concepts. Given the Additive Principle, this is exactly what we should expect.

What we have, then, is a picture somewhat like this[115]:

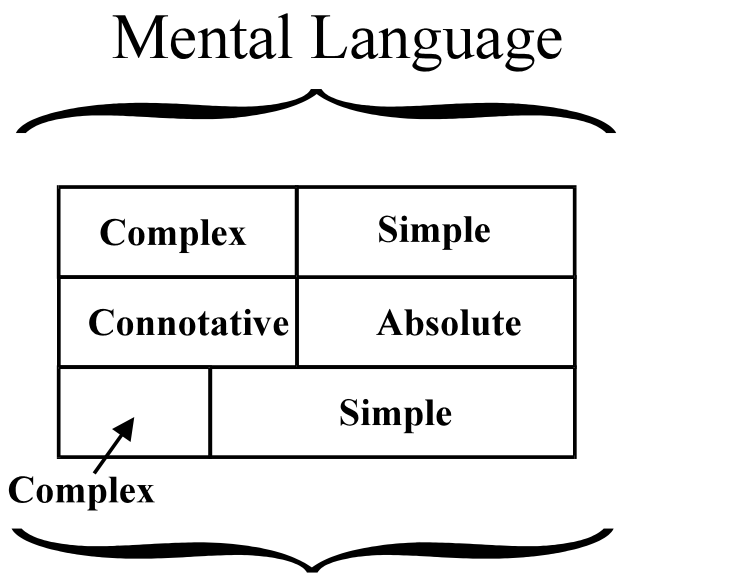

Figure 13: Simple and Complex *vs.* Absolute and Connotative

The upshot of all this is that connotation does not add any new and irreducible semantic relation to our theory. Apart from syncategoremata, the elementary building blocks of mental language are absolute terms, simple concepts. Connotative mental terms are simply constructs out of these. In spoken and written language, terms are absolute or connotative according to whether the mental terms they are subordinated to are absolute or connotative. In the end, then, connotation is not a new semantic primitive. It can be reduced to the signification of

[115] If the funny cases mentioned in nn 111–112 are allowed, this diagram would have to be adjusted.

absolute terms — primary signification ("being truly predicable of") — plus syntactical devices employed in combining concepts.[116]

4. Epistemological Factors

So far I have been talking as though the distinction between absolute and connotative names were a distinction fixed once and for all; a term is either absolute or it is connotative, and that's that. But in fact that is not so; we need to add some important epistemological qualifications. In effect, everything I have said so far about Ockham's connotation-theory has implicitly been from the point of view of an ideal knower — if you will, from God's perspective.

But Ockham has some other things to say about the distinction between absolute and connotative names, and what he says indicates that what is an absolute name for one person may perhaps not be absolute but rather connotative for another person.[117] Thus we must relativize our notions of absolute and connotative names. We must say a term is absolute or relative "relative to a person." What effect will this have?

Well, all the terms we have up to now been calling connotative will turn out to be still connotative — for everyone. But the terms we have been calling absolute may be connotative for some people and absolute for others.

Roughly, the distinction between absolute and connotative names parallels the distinction between what is sometimes called "knowledge by acquaintance" and "knowledge by description." For example, if I have seen or otherwise experienced lions, or whitenesses, I have an absolute mental name "lion" or "whiteness." That absolute mental name is a simple, "atomic" concept, and any spoken or written name subordinated to it is likewise absolute for me. On the other hand, if I have never experienced lions or whitenesses (perhaps I am blind), I can still know about them — not by "acquaintance" but by "description." For example, the spoken word 'lion' may be subordinated to the descriptive and "molecular" concept "king of the beasts," which is connotative,[118] and the spoken term 'whiteness' may be subordinated to the concept "color most dazzling to sight,"[119] which is likewise connotative.

So the same term may be absolute to you but connotative to me because my experience has been more restricted than yours. Whereas you got your simple absolute concept by simply observing instances of what it is a concept of, I had to get my complex connotative concept by piecing it together out of other concepts I got from my own narrower experience. An ideal knower, one who had knowledge

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[116] On this point, see also Spade, "Ockham's Distinctions between Absolute and Connotative Terms," p. 76.

[117] I am not going to go into detail here, since this is not a book about Ockham's epistemology. Nevertheless, for further information, see Adams, *William Ockham*, Ch. 13, and Moody, *The Logic of William of Ockham*, especially Ch. 6.

[118] At least if we allow the notion of connotation to apply to complex expressions as well as simple ones.

[119] This definition was a standard piece of mediaeval lore.

by acquaintance (what Ockham calls "intuitive cognition") of everything there is, would have absolute concepts of everything there is.[120]

Earlier, I said absolute names are the ones linked to an inventory of the world; connotative names add nothing new to the ontology.[121] But only for an ideal knower could a complete inventory of the world be accomplished by means of absolute terms alone. The relativization of the distinction between absolute and connotative names to persons means that, while there can be absolute names only where there is a corresponding entity[122] (since we get our absolute names by being actually acquainted with such entities), yet because of our ignorance or because of the narrowness of our experience, we might fail to have an absolute name for some entities that nevertheless do exist.

Note that because of the way we get absolute names — by encountering what they are names of — it follows that there are no "non-denoting" absolute names. But there are non-denoting connotative names — figment-terms,[123] for example. From the fact that we can construct a certain description by combining absolute concepts in various ways, it by no means follows that there actually is anything so described.

No doubt this "atomic/molecular" picture of concepts, with the accompanying story about how we acquire our atomic concepts, sounds familiar. And indeed it *should* sound familiar to anyone who has had the standard undergraduate "Descartes through Kant" course. Think, for example, of John Locke.

This familiarity should come as no surprise. Despite the now old-fashioned story, the views of those later philosophers were not created *ex nihilo*. They had a past, and their past is exactly the kind of doctrine we see here in Ockham and in other mediaeval authors.

5. An Interpretative Tangle

The picture I have presented above does have its dark and murky spots, for example the question how to determine which expressions express the *quid nominis* of a name and the question what exactly secondary signification is. But never mind. On the whole, it is a tidy and even attractive picture, and has come to

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[120] Earlier (p. 210 above) I said Ockham's choice of 'angel' as an example of an absolute term was an unfortunate one. We now see why. We do not know angels by acquaintance (or at least not enough people do to make it a good example), but by description. Hence *for us* it is a connotative term, even if it is absolute for God. It follows therefore that either the expressions Ockham listed — 'substance abstracted from matter', 'intellectual and incorruptible substance', 'simple substance that does not enter into composition with anything else' — are all synonymous (and even Ockham says they are not), or else some of them do not express the *quid nominis* of 'angel' after all.

[121] See p. 197 above.

[122] It doesn't go the other way around, at least not if the kind of "correspondence" we are talking about is merely a matter of the term's being truly predicable of the entity. For 'white' is truly predicable of white things, but is a connotative term, not absolute.

[123] Recall that figment-terms are not just names of things that don't exist, but names of impossible things. See p. 212 above.

be, I suppose, the "prevailing" interpretation of Ockham on these topics. For better or for worse, this is a situation for which I take some small responsibility.

Nevertheless, this interpretation has been challenged recently, first by Claude Panaccio in an excellent paper entitled "Connotative Terms in Ockham's Mental Language,"[124] and then by Martin Tweedale in his "Ockham's Supposed Elimination of Connotative Terms and His Ontological Parsimony."

a. Claude Panaccio's Interpretation

Panaccio's paper is motivated in large measure by concerns over relational concepts, which are one kind of connotative concepts.[125] But he discusses connotation more generally as well.

It was Panaccio who forced researchers in this area (including me) to recognize finally that Ockham did explicitly allow simple connotative terms in mental language, whether he should have done so or not, and that he did it in enough passages that it could not be just a momentary lapse on his part. Although in a sense these passages were common knowledge all along, it was Panaccio who gathered some of them together and presented them side by side, so that the point was driven home once and for all.

Given that Ockham did allow simple connotative names in mental language, what are we going to do about the "prevailing" view I have presented above? Well, here is how Panaccio sets up the problem.[126] The fact that Ockham does allow simple connotative names in mental language means that either his theory is just inconsistent or else there is something wrong with the following argument:

(1) All connotative terms have nominal definitions.

(2) Simple connotative terms are synonymous with their nominal definitions.

(3) But there is no synonymy in mental language, for the reasons we discussed above.

(4) Therefore, in mental language there are no simple connotative terms if their nominal definitions are there too. (Since the ability to form mental nominal definitions seems to require only minimal cognitive machinery, this in effect

[124] This paper caused quite a stir when it first appeared, and rightly so. You may think it was all a tempest in a teapot, since after all this material is pretty arcane stuff and only of interest to a very few people. That's true, I suppose, but things were really whirling around in that teapot for a while, and still haven't settled down. Those of us working in this area have all been forced to rethink their views.

[125] See p. 215 above. I think Tweedale effectively answers Panaccio's worries about relational concepts.

[126] Panaccio, "Connotative Terms," p. 12. I am rephrasing a little, but not much.

> means there are no simple connotative terms in mental language.)

Everyone agrees on step (1), and in any case it seems incontrovertible on the basis of Ockham's texts. And Panaccio accepts (3), for basically the reasons I gave above. Thus, the only place he can locate the problem is with step (2). Not surprisingly, this is exactly what he does.

Panaccio goes on to offer textual arguments to show that (2) is in fact not grounded, and that for Ockham connotative terms are not quite synonymous with their nominal definitions. I do not find his arguments entirely convincing.

First, there are passages where Ockham says definitions are more "explicit" than what they define. But surely synonyms ought to be equally "explicit." One such passage is *Summa logicae* III-2.14[127]:

> Likewise [the proposition] 'Every thing composed of matter and form is corruptible' is prior to [the proposition] 'Every body is corruptible', because the first explicates some things that the second does not explicate, and conversely, just as a definition explicates more things than the defined [does].

'Explicate' here is Latin *'explicat',* related to English 'explicit', and means something like "unroll," "display," "unfold." But whatever the exact sense, 'body' is an *absolute* term, not a connotative one, and the definition appealed to here ('thing composed of matter and form') is a real definition, not a nominal one. It is *part* of the "prevailing" interpretation, not an objection to it, to observe that absolute terms are not synonymous with their real definitions.[128]

Again, in his *Little Summa of Natural Philosophy* I.3, in a chapter on privation, Ockham says[129]:

> And if you say that definitions are not of names or terms but of things, it is to be said [in reply] that although the name 'defined' often stands for the thing the essence of which is expressed by the definition, nevertheless in many locutions it stands for the name or term. For instance, in *Physics* I [1, 184^{a}26–^{b}10], it is said "Now names hold in a certain way this same [relation] to the definition,"[130] meaning that *names* are the defined. And in general it is said that "A definition signifies the same [thing] explicitly that the defined signifies implicitly." In this proposition 'defined' stands only for a name or for a term.

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[127] Not Ch. 15, as Panaccio says, "Connotative Terms," p. 7, n. 14; see *Summa logicae,* Gál *et al.*, ed., p. 530.26–30.

[128] See p. 223 above.

[129] *Summula philosophiae naturalis* I.3, Brown ed., p. 162.52–60.

[130] definition: *rationem*. This word is the despair of translators everywhere, but Ockham plainly takes it here to mean 'definition' (one of its accepted meanings), so we will too.

It is not clear to me whether in this passage Ockham is talking about real or nominal definitions. Since the whole chapter is about privations, one would expect nominal definitions to be on the agenda.[131] On the other hand, the phrase 'the *essence* of which is expressed by the definition' suggests a real definition to me, since that's what real definitions do. But in either case the passage does not seem to me to be decisive. For why should synonyms be equally "explicit"? If "explicitness" is taken as a syntactical or structural matter rather than a semantic one, there would seem to be no reason to say they are. After all, 'unmarried man' is more "explicit" than 'bachelor', and yet in the modern literature they are a paradigm of synonymy.

Second, Panaccio observes that in *Quodlibet* V, q. 19, Ockham allows nominal definitions of verbs, adverbs and conjunctions, not just of "names" (= nouns and adjectives). He then remarks, "The definitions in these cases are metalinguistic while the defined terms are not, and consequently they cannot be synonymous with them."[132] But look at what Ockham actually says[133]:

> Fourth, [real and nominal definitions] differ in the fact that there is a definition expressing the *quid rei* only for names taken significatively,[134] but there is a definition expressing the *quid nominis* for verbs, adverbs and conjunctions [too]. For he who wants to define 'where' will say it is "an interrogative adverb of place." Likewise, he will say 'when' is "an interrogative adverb of time," and so on, where the definition is predicated of the defined *suppositing materially*.

The last two words, which I have emphasized, refer to so called "material supposition," which we will be discussing in the Chapter 8.. There we will see that material supposition works in many cases like quotation marks in modern philosophical usage, and that, in general, terms taken in material supposition are being used "metalinguistically." In short, I think Panaccio's point here is not well taken; the defined terms *are* being taken metalinguistically.

The most troublesome evidence Panaccio cites, however, is two discussions in Ockham's commentary on Aristotle's *Sophistic Refutations,* where Ockham says that terms are not always freely intersubstitutable with their definitions.[135] The passages are lengthy, and I won't quote them here. But both concern the Aristotelian fallacy known as "nugation" (*nugatio*). This is exactly the sort of thing Anselm was concerned to avoid when he insisted that 'literate' should not be defined as '*man* having literacy'.[136] Otherwise, recall, we could not say with syntactical correctness 'Socrates is a literate man', because it would amount to

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[131] See p. 215 above.

[132] Panaccio, "Connotative Terms," p. 14.

[133] *Quodlibet* V, q. 19 (Wey ed., p. 556.66–73).

[134] We shall see in Ch. 8 below that this means "taken in personal supposition."

[135] Ockham, *Expositio super libros Elenchorum* I.20, del Punta ed., pp. 129.1–133.67; *ibid*. II.16, del Punta ed., pp. 296.1–305.48.

[136] See p. 203 above.

saying 'Socrates is a man having literacy man', which is syntactical gibberish. (That's the technical meaning of 'nugation', this kind of syntactical stammering.)

Ockham certainly does say in these passages what Panaccio says he does. But I am not sure how much to make of it. First of all, it should be pointed out that Ockham says all this in a commentary. And it is usually sound advice to be wary about taking what an author says in a commentary as his own views; in a commentary he is constrained by the views of the text he is commenting on. Nevertheless, having said that I don't want to overemphasize it, because Ockham generally makes Aristotle fit his own views anyway, so that it is unlikely he doesn't mean what he says in these passages.

I have already noted that, by including in the nominal definition of 'white' a name for the bearer of whiteness, Ockham seems to be leaving himself wide open to problems of *nugatio*[137] — at least if he, like Anselm, regards connotative terms as in effect shorthand abbreviations for their nominal definitions, and therefore as intersubstitutable with them. This is exactly the problem Ockham is addressing in his commentary. It seems to me we have one of two choices. **(a)** We can say Ockham has simply formulated the wrong nominal definitions, that he should have formulated them without making reference to the bearer of whiteness or the possessor of literacy, for example, thereby preserving the synonymy of connotative names with their nominal definitions. Or, alternatively, **(b)** we can take Ockham at his word here and agree with Panaccio that connotative names are not synonymous with their nominal definitions after all.

I don't think it makes much difference in the end which alternative we adopt, because even if we follow Panaccio's interpretation (b), the problem does not go away. If what prevents connotative names (or at least some of them[138]) from being synonymous with their nominal definitions is the presence in the latter of an extra term for the primary significate of the connotative name (a term for the bearer of whiteness or the possessor of literacy), then let's just form another expression from the nominal definition by deleting the offending term. The result will be an expression ('having a whiteness', 'having literacy') completely contained in the nominal definition, so that if the latter whole occurs in mental language so does the former part. Furthermore, the resulting expression is exactly the expression interpretation (a) says Ockham should have given as the nominal definition in the first place, and it *is* synonymous with the connotative name. If it isn't, then in what sense is the nominal definition from which this expression was formed a correct nominal definition?[139] In other words, in order to generate the problem that now concerns us, we do not need connotative names to be synony-

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[137] See n. 51 above.

[138] The kind of case Ockham is discussing in his commentary on the *Sophistic Refutations* can only arise for adjectives. I do not see how it can arise, and so how the intersubstitutability of connotative names and their nominal definitions can be blocked, in the case of connotative *nouns* — much less in the case of connotative nouns *in general*. Remember, all it takes is a few or even one connotative name that is synonymous with its nominal definition in order to generate the problem we are trying to avoid. It is not enough to say that the intersubsitutability that would follow on synonymy fails in *some* cases.

[139] See the argument on p. 216 above.

mous with their nominal definitions; it is enough if they are synonymous with an embedded part of their nominal definitions. Either way, we will have synonymy in mental language.

b. Martin Tweedale's Interpretation

Martin Tweedale[140] agrees with Panaccio in accepting (3) and rejecting (2) of the above argument,[141] but for an entirely different reason. According to Tweedale, Ockham's usage suggests that he confines synonymy to *simple* words, so that simple connotative names fail to be synonymous with their nominal definitions, but only because those nominal definitions are complex expressions and therefore do not qualify as being synonymous with anything.[142] Hence there is nothing to prevent our having simple connotative terms together with their complex nominal definitions in mental language.

My objections to Tweedale's approach are two. First, it's false. Here is a passage where Ockham explicitly calls a complex expression (the combination of a copula plus a participle) a synonym. It comes from *Quodlibet* 5, q. 8 (Text **(51)**, § 19):

> For a verb and the participle of the verb taken together with the verb 'is' are always equipollent in signifying *and are synonymous*.

To be sure, that's the only text I know of like that. But my text at least has the advantage of being completely explicit, whereas Tweedale has no explicit texts at all. His argument is an argument from silence. After all, Ockham nowhere explicitly says he is confining synonymy to simple expressions; Tweedale's point is only that this is what he seems to be doing in practice. My reply: not always.

But second, even if we regard this passage as an isolated fluke, and otherwise agree with Tweedale about Ockham's overall usage, the problem has not gone away. If the only reason nominal definitions are not synonymous with the terms they define is that they are just "too big" to be synonyms, if they behave exactly like synonyms, then we have not gained anything. For, if you go back to look again at the passages from which we concluded that there is no synonymy in mental language,[143] you will see that Ockham himself doesn't put it in terms of mental synonymy; that was simply my (and other people's) way of putting it.[144] What Ockham himself actually says is that "there is no plurality of concepts cor-

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[140] Tweedale, "Ockham's Supposed Elimination of Connotative Terms and His Ontological Parsimony."

[141] See p. 233 above.

[142] Tweedale accepts (3), the claim that there is no synonymy in mental language, only in this "attenuated" sense: there are no simple (one-word) mental synonyms. See *ibid*., pp. 433–434. (For Tweedale, of course, this sense is not "attenuated" at all, since it is the only sense of 'synonymy' Ockham uses.)

[143] See Ch. 4, pp. 97–103, above.

[144] I think it is a quite correct way of putting it, but the point now is that it is not quite the way Ockham himself says it.

responding to synonymous names" (Text **(51)**, § 11), or "there is no plurality in the mind corresponding to the multitude of synonymous names in speech" (Text **(52)**, § 3). (The "correspondence" he is talking about is the correspondence whereby spoken or written terms are subordinated to the mental terms that give them their semantics.)

It is this claim that will not hold in general if mental language contains both simple connotative terms and their nominal definitions, whether we say those nominal definitions are synonymous with the terms they define or not. For if we agree that spoken and written expressions inherit their semantic behavior from the concepts they are subordinated to, and if we further agree that at least *simple* expressions are synonymous if they behave semantically exactly alike,[145] then either nominal definitions fail to be synonymous with the terms they define because they do not behave semantically exactly like those terms, and so fail for reasons in addition to their being too complex, or else our problem remains. For suppose *c* is a simple connotative concept and *d* its mental nominal definition. Then if two simple spoken or written terms t_1 and t_2 are both subordinated to *c,* everyone will agree they are synonymous. Likewise if they are both subordinated to *d.* But if one of them is subordinated to *c* and the other one to *d,* and the nominal definition *d* behaves semantically exactly like the connotative concept *c* it defines, then t_1 and t_2 will be synonymous once again,[146] even though this time they are subordinated to two distinct concepts, in explicit violation of Ockham's claim that "there is no plurality of concepts corresponding to synonymous names."

In sum, quite apart from the question whether it is textually justified or not, restricting synonymy to simple expressions in the way Tweedale does will not by itself fix our problem.

c. Suggestions and Conjectures

Where does all this leave us? It is not easy to say. But two things, at any rate, seem pretty much agreed. First, Panaccio's evidence shows that it is Ockham's considered opinion that mental language contains simple connotative terms. And second, mental language has the conceptual and syntactical wherewithal to formulate the nominal definitions of any connotative terms it possesses.[147]

The situation is less clear with the claim that there is no synonymy in mental language — or, to accommodate Tweedale's point about Ockham's (usual) restriction of synonymy to one-word expressions, that there are no two

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[145] Recall Ockham's characterization of synonymy in *Summa of Logic* I.6, § 1: "Those synonyms are broadly so called which simply signify the same [thing] in all ways, so that nothing is signified in any way by the one [synonym] unless it is signified in the same way by the other … I intend to use the name 'synonym' in this second sense in this chapter and in many others."

[146] Since they are both simple, and behave semantically exactly alike.

[147] This claim has never been explicitly supported with textual arguments, as far as I know. But it has never really been disputed either. Certainly mental language would be impoverished indeed if it could not do this.

expressions in mental language that play exactly the same semantic roles. On the one hand, Ockham more than once says outright that synonyms in spoken language do not correspond to a plurality of concepts in the mind.[148] This, combined with the view that the subordination-relation is completely conventional,[149] implies that there are no two expressions in mental language that behave semantically exactly alike, whether we call them "synonyms" or not. In addition, there is the theoretical argument I gave you in Ch. 4, above, that Ockham's "similarity" account of natural signification would mean that two such concepts are only numerically distinct.[150] On the other hand, there is the troublesome passage in *Summa of Logic* I.6, § 1, that seems to imply that, in his usual sense of 'synonymy', spoken synonyms can after all be subordinated to distinct concepts — and since it is synonyms that are subordinated to these concepts, the concepts must behave semantically alike.

One might try to reconcile these texts by suggesting that when Ockham says spoken synonyms do not "correspond" to several concepts in mental language, he has in mind a correspondence that is more than just the subordination-relation. If we agree with Tweedale that Ockham typically (but not always) calls only simple expressions synonyms, then perhaps what Ockham means is that spoken synonyms do not correspond (are not subordinated) to a plurality of *correspondingly simple* expressions in mental language. If that is so, then the texts say only that there are no *simple* synonyms in mental language; the question of complex mental expressions is left open, and therefore *Summa of Logic* I.6, § 1, can be accommodated.

The problem with this initially attractive suggestion is that there is absolutely no positive evidence that this is in fact what Ockham means by 'correspondence' in these passages. Furthermore, there is still the theoretical argument in Ch. 4, about "similarity,"[151] which still conflicts with *Summa of Logic* I.6, § 1.

There is another possibility to be considered here, although it too does nothing to accommodate *Summa of Logic* I.6, § 1. Recall the discussion in Gregory of Rimini and Peter of Ailly about whether mental propositions properly so called are really metaphysical complexes, composed of parts, or whether they are metaphysically simple but nevertheless somehow "equivalent in signifying" with certain complex expression.[152] And recall also that while Ockham usually talks about mental propositions as if they are metaphysically complex, there are passages[153] where he seems to espouse the other theory. Could it be, then, that when Ockham says there are simple connotative terms in mental language, he means something similar? If so, then we would not necessarily have simple connotative

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[148] That is, concepts that differ more than just "numerically." See the discussion in Ch. 4, p. 102 above. Thinking the same concept twice does not count as the kind of "synonymy" we are interested in here.

[149] See Ch. 4, p. 102 above on the role of this proviso.

[150] See Ch. 4, p. 102, above.

[151] *Ibid.*

[152] See Ch. 4, pp. 125–130, above. Exactly what kind of "equivalence" this is supposed to be remains unclear.

[153] See, for instance, Texts **(36)** & **(38)**.

terms in mental language and in addition their complex mental nominal definitions, any more than we have metaphysically simple mental propositions and in addition metaphysically complex ones that say the same thing. On this hypothetical view, everything that goes on in mental language is metaphysically simple and not really composed of parts at all; nevertheless, we can still speak of them as "complex" because their semantics makes them somehow "equivalent" to complex expressions. Simple connotative concepts would then be "synonymous" with their mental nominal definitions only in the degenerate and innocuous sense of being identical with them.[154] The presence of simple connotative mental terms would then not by itself be any reason for introducing synonymy into mental language in any objectionable way. (There is still, of course, the reason given in *Summa of Logic* I.6, § 1.)

I find this approach perhaps the most attractive one to pursue. For, apart from the question of mental synonymy, there is another reason to be worried about the possibility of simple connotative concepts: they threaten to interfere with the epistemology of mental language. According to the picture presented above,[155] the distinction between absolute and connotative terms in mental language comes down to the distinction between simple concepts that we acquire by direct experience with what they are concepts of ("knowledge by acquaintance"), and complex concepts that we acquire by constructing them in various ways out of those simple concepts and that therefore may be concepts of things we have never directly encountered ("knowledge by description"). Obviously this picture in trouble if we allow simple connotative concepts.

But the trouble can be handled with a minimum of adjustment if we follow the interpretation I have just suggested. According to this revised picture, all mental terms are metaphysically or "structurally" simple. Nevertheless, some of them are in addition "semantically" simple while others are "semantically" complex, just as mental propositions are metaphysically or structurally simple but semantically complex insofar as they are "equivalent in signifying" with complex expressions. The distinction between absolute and connotative terms in mental language then comes down to the distinction between semantically simple concepts that we acquire by direct experience with what they are concepts of, and semantically complex concepts that we acquire, not by literally "constructing" them out of absolute concepts in such a way that the latter are really parts of the connotative concepts (they don't have parts), but by in any case mentally doing something that presupposes those absolute concepts and that yields the new, connotative concept as a result.

Obviously there are many questions to ask here. What exactly does the mind do to produce these connotative concepts? If it does not use absolute concepts as parts of the connotative concepts it produces, then why are the absolute concepts required for this mental operation at all? And exactly what sense are we

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[154] In this connection, note that when Peter of Ailly says it is arguable that mental language has the simple concept "white," he uses the telltale expression 'equivalent in signifying', the same expression he used in discussing the structure of mental propositions properly so called. See Text **(80)** and p. 224 above.

[155] See pp. 228–232 above.

to make out of the "semantic complexity" of metaphysically simple concepts?[156] But for all the questions it suggests, this approach does save the epistemological significance of mental language. It allows us, for example, to have a simple concept of God (as Ockham says we do have) without requiring any direct acquaintance with God. In my view, any full account of Ockham's theory of connotation must deal with these epistemological issues, since Ockham himself certainly uses connotation-theory for epistemological purposes.

We have pushed the question of connotation in Ockham's theory of mental language about as far as I am prepared to go at present. If there is a final, completely satisfactory account that resolves all the lingering problems, I leave it as a homework exercise to find it.

D. Additional Reading

For additional reading on the material covered in this chapter, see: Marilyn McCord Adams, *William Ockham*, particularly Chs. 5–9 and 13; Michael J. Loux, "The Ontology of William of Ockham"; Claude Panaccio, "Connotative Terms in Ockham's Mental Language"; Paul Vincent Spade, "Ockham's Distinctions Between Absolute and Connotative Terms," "Ockham, Adams and Connotation." (That last item, in § V, pp. 602–608, contains a discussion of Ockham's use of connotation-theory in his program of "reducing" the Aristotelian categories to substance and quality alone. There I present an argument that the program, at least as usually conceived, will not work, for reasons that I have not gone into in the present chapter.) Also Paul Vincent Spade, "Synonymy and Equivocation in Ockham's Mental Language"; Martin M. Tweedale, "Ockham's Supposed Elimination of Connotative Terms and His Ontological Parsimony."

[156] We have already encountered a variation of this last question when we considered Gregory's of Rimini's and Peter of Ailly's theory of mental propositions as metaphysically simple. See Ch. 4, pp. 125–130, above.

Chapter 8: Supposition — The Theory of Reference

ack in the 1960's, T. K. Scott's translation of Buridan's *Sophismata* was one of the first English translations of an important mediaeval logical work.[1] As a result, the translation had a considerable influence on an entire generation of scholars. It came with an "Introduction" that was for many people their first exposure to this dense fourteenth-century literature. Much of what Scott wrote in that "Introduction" has now been superseded. But there is an important distinction he draws there that I think is absolutely crucial for understanding the theory of "supposition" as it had developed by the fourteenth century.

According to Scott, supposition-theory is not one theory but two. As a result, it is a mistake to try to give a single, general characterization of supposition that will take account of both theories at the same time. Here is what he says[2]:

> It is this double function of supposition that has led astray most attempts to give a general characterization of the theory. It is in fact, not one theory, but two, and they require separate treatments. The first, which can be called simply the doctrine of supposition proper, is a set of rules governing the reference of terms in propositions and is the basis for a theory of truth. The second, which I call the doctrine of modes of supposition, has no effect on the reference of terms, but is a set of rules for the syntactical analysis of propositions containing quantifying words and is thus the quantification theory of terminist logic.

I will argue in Ch. 9, below, that that last part, about quantification theory, is not right. But quite apart from that, the claim in the quotation ought to strike

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[1] John Buridan, *Sophisms on Meaning and Truth* (published in 1966). It was not the very first; Joseph Mullally had already translated Peter of Spain's *Summulae logicales* and *Tractatus syncategorematum* on the basis of pre-critical and highly unreliable early printed texts. Scott's translation was the first one directed to a philosophical audience of a broadly "analytical" persuasion.

[2] Scott, "Introduction" to Buridan, *Sophisms on Meaning and Truth,* p. 30.

you as suspicious. After all, if 'supposition' covers two theories as diverse as Scott wants them to be, then why did the two share the same name? Why did no mediaeval author, so far as I know, recognize and say that 'supposition' is an equivocal term — equivocal in the quite radical way Scott says it is?

Nevertheless, despite the oddity, I think Scott is absolutely right, at least about supposition theory from about Walter Burley on — that is, from at least the early-fourteenth century.[3] What may have happened, and what I suspect did happen, is that a single, more or less unified notion of supposition gradually split into two theories. But we will talk more about that in Ch. 9.

Well, what are the two theories Scott finds combined under the one heading 'supposition'? In the above passage, he calls the first "the doctrine of supposition proper" and the second "the doctrine of modes of supposition." Neither expression is a mediaeval one. But the expressions are useful ones for distinguishing these two main parts of supposition theory, and I will adopt them here. The present chapter then is about the theory of "supposition proper"; Ch. 9 will be about the theory of "modes of supposition."

The first theory contains the division of supposition into proper and improper (at least for authors such as Ockham and Burley), and of proper supposition into material, simple and personal, together with various subdivisions of material and simple supposition. The details vary considerably from author to author.[4] It also contains the theory of "ampliation" (or how to "expand" or "amplify" the supposition of a term in the context of tensed and modal words), and at least in some authors a theory of "restriction." There is no need to worry about all these terms right now.

The second theory, on the other hand, is confined to personal supposition. It contains the division of personal supposition into discrete and common, of common supposition into determinate and confused, and of confused supposition into merely confused and confused and distributive. Some authors also talk about "mobile" and "immobile" supposition here.[5] Again, do not worry over these terms now. The point is that the second theory is one that concerns divisions and subdivisions of personal supposition only. It develops these distinctions in terms of an elaborate account of something called "descent to singulars," sometimes combined, at least in the most careful and complete authors, with a correlative account of "ascent from singulars."

The main difference, however, between the two theories can be seen by asking what question each one tries to answer. The first one answers the question "What thing or things does a given term in a given proposition 'supposit' for?" That is to say, what a term supposits for is completely determined by the first theory. The second theory has nothing to do with that question — at least not by the fourteenth century. Instead, it appears to be addressed to another question.

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[3] Burley wrote a treatise *De suppositionibus* around 1302. See Stephen F. Brown, "Walter Burleigh's Treatise *De suppositionibus.*" On the date, see *ibid.,* p. 16.

[4] See the diagrams in the *Supplement* at the end of this chapter.

[5] Ditto.

And what question is that? Well, unfortunately, that is hard to say. In effect, we are asking what the strange theory of descent and ascent is trying to do. And that is far from clear.

In the past, it has often been said that the theory provided an account of truth conditions for quantified propositions, so that in effect the second half of supposition-theory amounted to the mediaeval version of quantification.[6] But, as we shall see in Ch. 9 below, there are serious reasons to dispute that.

In the present chapter, however, we are concerned with the first part of supposition theory, the "doctrine of supposition proper." I should add that I am not going to talk about ampliation in this chapter, even though it belongs to the first part of supposition-theory; that will come in Ch. 10.

Now the "doctrine of supposition proper," I said, addresses itself to the question what thing or things a given term in a given proposition "supposits for." It would be a lot easier to answer that question if we knew what it meant in general for a term to supposit for something. What sort of relation is supposition?

Well, the first thing we can say about it is that supposition is a semantic relation. To a first (but pretty good) approximation, supposition in this first part of the theory is what nowadays we call "reference." It is the relation between the terms used in a proposition and the things those terms are used to talk about in that proposition. Just what those things are is a question that depends in part on the syntactical relations among the terms in the proposition. But that doesn't make supposition a syntactical relation, as has sometimes been claimed.[7]

Many authors did distinguish a grammatical use of the term 'supposition' from a properly logical use. For the grammarians, they say, supposition is properly confined to the grammatical subjects of propositions, whereas logically speaking, supposition occurs in both subjects and predicates.[8] Here, for example, is what Buridan says[9]:

> I say therefore that here I do not mean 'supposition' as the grammarian speaks of it, that is, insofar as a nominative is called a *"suppositum"* with respect to a verb because it provides it with a person.[10] For in this way the term 'chimera' supposits the verb[11] 'runs' in the proposition 'A chimera runs'. But for the logician, supposition is said properly of the subject and the predicate of a

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[6] See, for example, the passage from Scott quoted on p. 243 above.

[7] For example, in Moody, *Truth and Consequence in Medieval Logic*, p. 22, "*Supposition* is a syntactical relation of term to term, and not a semantical relation of the term to an extra-linguistic 'object' or 'designatum'." In my view, that claim is dead wrong.

[8] The grammatical usage, which should be kept strictly separate from the logical one, may have been in part what was behind Moody's view, although in actual fact he gives a rather strange theoretical argument in support of his claim (*ibid*., pp. 22–23).

[9] Buridan, *Sophismata,* Ch. 3, Scott ed., p. 50. Scott, trans., pp. 99–100.

[10] This is a little piece of mediaeval grammatical lingo. Just ignore it. It has to do the grammatical notion of "first person," "second person," "third person."

[11] The construction is '*supponit*' plus the dative.

> proposition, and even sometimes, less properly, oblique terms that are *parts* of subjects and predicates are conceded to supposit.

Again, this same dual usage is appealed to in the following passage from Lambert of Auxerre's *Logica*[12]:

> In the third way, supposition can be called the ordering, with respect to its position, of the part of a proposition of which something is said. Thus, there is said to be supposition in a name with respect to a verb. For the name supposits the verb, and the verb is said of the name. To this kind of supposition there answers "appellation."[13] Appellation can be called the ordering, with respect to position, of that which is said of another.
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> In the fourth way, supposition is called the taking of a term for itself,[14] or for its [corresponding] thing, or for some *suppositum* or *supposita* contained under its [corresponding] thing.[15] And it is in this fourth way that I intend 'supposition' here… For 'supposition' said in the third way pertains to grammar and not to logic.

Burley draws the same distinction in his *Longer Treatise on the Purity of the Art of Logic,* although he doesn't there link the distinction with the difference between grammar and logic. Instead, he describes it purely in terms of a broader and a narrower use (*Purity,* §§ 4–5)[16]:

> As for the first chapter, you have to know that 'supposition' is taken in two senses, namely, broadly and properly. Supposition taken broadly is a property of a term relative to another term in a proposition. In this sense, supposition belongs to the subject as well as to the predicate, and even to the verb or the consignificates of the verb. We shall use 'supposition' in this sense in many places in this first part [of the *Longer Treatise On the Purity of the Art of*

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[12] Alessio ed., p. 206. See Kretzmann and Stump, *The Cambridge Translations of Medieval Philosophical Texts,* vol. 1, p. 106.

[13] Don't worry about the what "appellation" is here. We have already seen the term in Ch. 7, pp. 199–204, 217, above. The word has a variety of meanings in the grammatico-logical literature.

[14] Reading *'pro se'* for Alessio's *'per se'*.

[15] This is confusing unless you are warned about it. The term *'suppositum'* (the perfect passive participle of the verb translated as 'supposit') has two quite distinct usages. On the one hand, it can mean "whatever a term supposits for," and that will obviously be the most important meaning for us. But there is also a metaphysical meaning that comes ultimately out of the theology of the Incarnation and the Trinity. In the latter sense a *"suppositum"* is (roughly) something that does not inhere as a metaphysical ingredient of anything else, but is such that other metaphysical ingredients may inhere in it. It is the latter sense that Lambert is using here. (Otherwise his claim would be vacuous: Supposition is the taking of a term for what is supposits for.) There is some historical link between the metaphysical/theological use of the term *'suppositum'* and the logical use, but the details are not yet well researched.

[16] Compare Ockham, *Summa of Logic* I.63, § 2.

> *Logic*]. Taken in this sense, supposition belongs to more than appellation does, because supposition belongs to the subject as well as to the predicate, while appellation belongs only to the predicate.
>
> Supposition properly so called is a property of the subject term relative to the predicate. Now 'term' here is taken indifferently for anything that can be an extreme of a proposition, whether it is a simple term, whether it is an aggregate of an adjective and a substantive, or [an aggregate] of adjectives, or is even put together by means of conjunction or disjunction.[17]

In the present chapter, I want to confine our discussion to the "logical" notion of supposition, which applies to both the subjects and predicates of propositions.

A. The Difference Between Supposition and Signification

First of all, how does supposition differ from signification? After all, both are semantic relations of terms to things.

Some authors don't explain the distinction very clearly at all. William of Sherwood, for instance, treats supposition as a species of signification[18]: "The signification of something as subsisting is called 'supposition'." Similar remarks can be found in other authors.[19] But let us listen to what Peter of Spain tells us about the difference between supposition and signification[20]:

> The signification of a term, as it is taken here, is the representation of a thing by an utterance, according to a convention… But supposition is the taking of a substantive term for something. Now supposition and signification are different. For signification occurs through the imposition of an utterance for signifying a thing. But supposition is the taking of the term itself, already significant, for something. Thus when 'Man runs' is said, the term 'man' supposits for Socrates and Plato, and so on. Hence signification is prior to supposition. Neither do they belong to the same thing. For to signify belongs to an utterance, but to supposit be-

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[17] Do not worry about the details of these alternatives.

[18] William of Sherwood, *Introductiones in logicam*, Ch. 5, Grabmann ed., p. 74.22–23; Lohr ed., 5.0.1 (p. 265.14–15). Compare Kretzmann trans., p. 105. Strictly speaking, William is here defining supposition taken in what he calls a "dispositional" sense, as opposed to an "actual" sense (*in habitu/in actu*). But we needn't dwell on that distinction now. For further information on the background and context of this distinction, see Braakhuis, "The Views of William of Sherwood."

[19] See De Rijk, *Logica modernorum*, vol. 2, index under 'suppositio'.

[20] Peter of Spain, *Summulae logicales*, tract. VI, De Rijk, ed., pp. 79 § (2)–80 § (3). Compare Dinneen trans., pp. 69–70.

> longs to a term already, as it were, put together out of an utterance and a signification. Therefore, supposition is not signification.

The basic idea here is fairly standard among later authors. It is one thing to assign certain terms to certain things — that is, to establish the subordination relation — so that we can have a language at all. It is quite another thing actually to use that language, to employ those terms in actual practice to talk about things. The differences in practice come down to two main ones:

1. The First Main Difference

Terms perform their significative function whenever we run across them. Signification, remember, is a kind of causality — even if it is conventional — so that the effect is triggered whenever the cause is present. On the other hand, it is by means of "propositions" that we actually talk about things and say things about them.

Hence the first difference between signification and supposition is that terms supposit only in the context of a proposition, whereas they signify whether they occur in a proposition or in isolation.

Although this is fairly standard doctrine, there is some dispute over it. You sometimes hear about something called "natural supposition," which a term is supposed to be able to have even outside the context of a proposition. Unfortunately, there is a lot of confusion in the secondary literature over the doctrine of natural supposition. Many of the texts cited to illustrate the doctrine are ambiguous on the question whether terms can supposit naturally even outside a propositional context.

Perhaps the best known text in this regard is the following passage from Peter of Spain[21]:

> Natural supposition is the taking of a common term for all the things by which it is naturally apt to be participated. For instance, 'man', taken by itself, supposits by its nature for all men who were and who are and who will be.

And then Peter goes on to contrast this with what he calls "accidental supposition"[22]:

> Accidental supposition, on the other hand, is the taking of a common term for the things for which [what is] adjoined [to it] requires [it to be taken]. For example, 'Man is' — the term 'man' supposits for present [men]. But when 'Man was' is said, it supposits for past [men]. And when 'Man will be' is said, it supposits

[21] Peter of Spain, *Summulae logicales*, tract. VI, De Rijk ed., p. 81 § 4. Compare Dinneen trans., p. 70.

[22] *Ibid*.

> for future [men]. And so [the term] has diverse suppositions according to the diversity of the things adjoined to it.

The business about tenses belongs to the theory of ampliation, and we can ignore that for now.

Accidental supposition is clearly confined by this passage to propositional contexts. On the other hand, in the characterization of natural supposition, the key phrase is 'taken by itself'. Does the phrase mean that the term can have natural supposition even outside a propositional contexts, "by itself," or does it mean only that within a propositional context, what a term supposits for in natural supposition does not depend on what the other parts of that proposition are, but only on the term itself ("by itself")? The text does not decide between these two alternatives.

Many texts on natural supposition are like this, and I suspect most of them mean nothing stronger than the second alternative.[23] Nevertheless, some authors are quite explicit on the matter, and do unequivocally allow terms to have natural supposition outside propositional contexts. Thus, Lambert of Auxerre says[24]:

> Natural supposition is what a term has by itself and from its nature. A term is said to have this when it is put by itself, that is, when it is adjoined to nothing else. Now a term having this kind of supposition not only supposits for things that participate its form; rather it supposits for *all* the things that participate its form, namely, for present, past and future things. Now this kind of supposition is called "natural" insofar as the intention is not from outside but from inside. For the natural is that the principle of which is within. Accidental supposition is what a term has from an adjunct, and in this kind of supposition a term supposits according to the requirements of what it is adjoined to. For if 'Man is' is said, it supposits for present [men], because it is adjoined to a verb in the present. If 'Man was' is said, [it supposits] for past [men]. If 'Man will be' is said, [it supposits] for future [men]. Now this is called "accidental" insofar as it is in a term from outside. For what inheres in something from outside is accidental to it.

Again, a certain Robert the Englishman (which doesn't narrow it down a lot), in his commentary on Peter of Spain *Summulae logicales*, says[25]:

> First note that a term placed outside an expression has natural supposition, and in that case it supposits for all the things that

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[23] See, for example, the passages discussed in De Rijk, "The Development of *Suppositio naturalis*." To my mind, De Rijk is far too ready to interpret such passages as implying that natural supposition occurs outside propositional contexts. And he is by no means alone in this.

[24] Lambert of Auxerre, *Logica*, Alessio ed., p. 208. See Kretzmann and Stump, *The Cambridge Translations of Medieval Philosophical Texts,* vol. 1, p. 109.

[25] Quoted in Brown, "Walter Burleigh's Treatise *De suppositionibus,*" pp. 21–22, n. 25.

> are and that were and that will be. For example, 'man' placed by itself. But a term placed in an expression has accidental supposition, and in that case it supposits for present things, for example 'Man runs', or for future things, for example 'Man will be', or for past ones, for example 'Man was'.

Nevertheless, apart from funny business about "natural" supposition in some authors, we can say that supposition occurs only in a propositional context. And this is the first main difference between supposition and signification, which can occur outside a propositional context according to almost any author.

2. The Second Main Difference

The second main difference is this: We do not always in practice use terms in propositions to talk about what those terms signify. We use them in a variety of other ways too. Hence supposition also differs from signification insofar as a term may signify one thing, but supposit on a given occasion for something entirely different. The various possibilities here are organized and codified in the main divisions of supposition, to which we now turn.

B. The Kinds of Supposition

Please refer now to the *Supplement* at the end of this chapter. We are not yet concerned with any of the subdivisions that come under "personal" supposition. They belong to the second of the two theories combined under the general heading 'supposition': the theory of "descent and ascent," which we will talk about in Ch. 9.

For now we are concerned with everything down to that point. What I am going to say about these divisions will be based primarily on Ockham and Burley, because I think things are clearer in those authors — at least they are for me. I will refer to the other authors cited in the *Supplement* as I have occasion to.

1. Proper and Improper Supposition

Let us look then at how Ockham and Burley divide up supposition. Both of them begin with a division into proper and improper supposition. This is a division many authors omitted, as you can see from the *Supplement*.

Here is the way Ockham describes the difference between the two near the very end of the first part of the *Summa logicae*[26]:

[26] Ockham, *Summa logicae* I.77, p. 236.24–4.

> Now you need to know that just as proper supposition occurs when a term supposits for what it properly signifies, improper supposition occurs when a term is employed improperly.

This borders on tautology, and is not much help. As we shall see shortly, it is a very careless way of putting the matter. Burley's way of stating the distinction is somewhat less precise, but at least not positively objectionable. Here is what he says in *Purity,* § 8:

> By its first division, supposition is divided into proper and improper supposition. Supposition is proper when a term supposits for something for which it is permitted to supposit literally. Supposition is improper when a term supposits for something by transumption[27] or from its usage in speech.

Improper supposition therefore is the kind of supposition or reference a term has when it is used figuratively and not literally.

Now a detailed semantics of metaphor was just as much beyond the reach of mediaeval authors as it is beyond our reach today. So we should not be surprised to find that the theory of improper supposition is not worked out very fully. Nevertheless, both Ockham and Burley do list three kinds of improper supposition[28]:

(a) "antonomastic," in which a general term that signifies several things is appropriated to supposit for only one of them by reason of its excellence, as in 'The Apostle says this' (meaning St. Paul[29]) or 'The Philosopher denies this' (meaning Aristotle). In Latin, of course, these sentences would not have the definite article, since Latin doesn't have one.

(b) "synechdochical," in which a term that signifies a part of something is used to supposit for the whole thing, as in 'The prow is in the sea', when we mean that the whole ship is in the sea. Richard Lavenham, later in the fourteenth century, also allowed it to go the other way around, as in 'Christ descended into hell', where we mean that his soul

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[27] 'Transumption' is the name given by the mediaevals to the second of the three "modes" of equivocation described by Aristotle at *Sophistic Refutations* 4, 166^{a}4ff. It amounts to equivocation by analogy. For example, the term 'man' may be used to describe both human beings and the images or statues of human beings.

[28] Ockham, *Summa logicae* I.77, p. 237.5–10; Burley, *Purity,* Ch. 6, §§ 188–191.

[29] For purposes of the example, ignore the inconvenient fact that St. Paul wasn't really one of the twelve Apostles.

descended into hell — so that here the term for the whole supposits for a part rather than conversely.[30]

(c) "metonymical, in which a term that signifies a container is used to supposit for what is contained. Lavenham gives the examples 'Drink a cup', or 'England fights'.[31]

This is a pretty haphazard list of figurative usages, as mediaeval authors knew full well. But in any case, the theory of improper supposition went no further than this — with one qualification. Burley also uses the phrase 'improper supposition' in a quite different sense (*Purity,* § 193). If, with Burley and others, we call the whole subject and the whole predicate of a proposition its "extremes," then Burley says that *parts* of extremes do not supposit properly, but only improperly. For example, in 'You are going to Rome' the term 'Rome' would supposit only improperly, since it is neither the subject nor the predicate of the proposition, but only a part of the predicate; the whole predicate is 'going to Rome'.

Many authors said things like this.[32] Their reasons are at best obscure. It seems to have had something to do with blocking inferences from terms of narrower extension to terms of broader extension. Thus, although everyone who goes exists, it does not follow that everyone who goes to Rome exists at Rome.[33] Still, it escapes me why authors tried to block inferences like this by saying that certain terms don't have supposition, or have it only in some inferior way. Why didn't they instead just refine the rules for inferences from a narrower to a broader term? In any event, the same authors who seem to think there is something faintly illicit about the supposition of parts of extremes are nevertheless able to put their scruples aside in practice, and regularly appeal to such supposition whenever the occasion suits them.[34] I will follow their practice rather than their preaching, and

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[30] Richard Lavenham, *Suppositiones*, § 3, edited in Spade, "Five Logical Tracts" p. 93. Lavenham's discussion of improper supposition, which is basically the same as Burley's and Ockham's, is found *ibid*., pp. 93–94, §§ 3–5.

[31] *Ibid*., p. 93, § 4. Those of you with some training in rhetoric will no doubt recognize these three types of improper supposition as based on classical rhetorical figures.

[32] For instance, Buridan as quoted on p. 246 above (Buridan says such supposition is only "less proper"), and Ockham, *Summa of Logic* I.72, § 23.

[33] The example is Burley's, *Purity,* §§ 193–194. Burley expresses the fallacious inference as *'si tu es vadens Romae, tu es existens Romae'*. (*'Romae'* is in the locative case in the consequent. The locative would not normally be used to express a destination, so *'Romae'* in the antecedent is a little odd. Alternatively, it could be in the dative there — the two forms would look exactly alike — but *'vadens'* would not normally be construed with the dative of destination either.) English requires the switch from 'to Rome' to 'at Rome' and so looks fallacious on the face of it in a way the Latin perhaps does not.

[34] For example, Burley himself, *Purity,* § 93, appeals to the supposition of 'bread' in 'Twice you ate a loaf of bread' in order to explain why the startling inference 'Twice you ate a loaf of bread; therefore, a loaf of bread you ate twice' is invalid. In neither the antecedent nor the consequent is 'loaf of bread' the whole extreme, but Burley does not hesitate to attribute supposition to it, and says nothing to suggest that its supposition is somehow less than respectable. The example is by no means an isolated one.

allow parts of extremes to supposit just as much, and just as genuinely, as the extremes themselves do.

2. The Divisions of Proper Supposition

So much for improper supposition. We turn now to proper supposition, which comes in three kinds for most authors: personal, simple and material. These may be illustrated by the following paradigmatic propositions. The term 'man' in

(a) '(A) man runs' has personal supposition[35];

(b) 'Man is a species' has simple supposition;

(c) 'Man is a monosyllable' has material supposition.

(Don't worry for now about putting quotation marks around the subject of the last example. The theory of material supposition will do, among other things, what we do nowadays with quotation marks.)

Now these propositions are paradigms, and we can learn a lot from them. But we can also be misled and get things quite wrong if we concentrate on them too exclusively. Instead, let us look at the actual definitions of these three kinds of supposition, beginning with Ockham's.

a. Ockham's Divisions

In order to understand his definitions, recall that for Ockham, although spoken and written terms are subordinated to concepts, they do not in general signify those concepts, as they do for Boethius and others.[36] Rather, they signify whatever those concepts signify or are likenesses of. You must also remember that Ockham was a nominalist, and therefore rejected all real universals or common natures. For Ockham, therefore, terms signify individuals, since that is the only kind of thing there is for him. In fact, terms for Ockham signify — that is, "primarily" signify — *the things they can be truly predicated of*. The term 'man', therefore, primarily signifies all individual men: Socrates, Plato, and so on.

i. Personal Supposition

With this in mind, here is how Ockham defines personal supposition (*Summa of Logic* I.64, § 2):

> Personal supposition, in general, is that [which occurs] when a term supposits for its significate, whether that significate is

[35] I put the indefinite article in parentheses, since the corresponding Latin sentence would not have one.

[36] See Ch. 3, p. 79, above.

> **(a)** a thing outside the soul, whether it is **(b)** an utterance, or **(c)** an intention of the soul, whether it is **(d)** an inscription, or anything else imaginable. So whenever the subject or predicate of a proposition supposits for its significate in such a way that it is taken significatively, the supposition is always personal.

And he goes on to give some examples of the various possibilities he lists (*ibid*., §§ 3–6):

> **(a)** In 'Every man is an animal', 'man' supposits personally for a thing outside the soul.
>
> **(b)** In 'Every spoken name is a part of speech', 'name' supposits personally for utterances.
>
> **(c)** In 'Every intention of the soul is in the soul', 'intention of the soul' supposits personally for intentions of the soul.
>
> **(d)** In 'Every written word is a word', 'written word' supposits for inscriptions.

In each case, the term refers to or supposits for the things it (primarily) signifies, the things it is truly predicable of, and so is in personal supposition.

Notice, at the end of the definition just quoted, the phrase 'taken significatively'. What do you suppose its role is? Well, it is not redundant; it does not just repeat the earlier part, about the term's suppositing for what it signifies.

The proper interpretation of this phrase confused me for a long time. And in my paper "Ockham's Rule of Supposition," I said some things I later had to retract.[37] I have come to the conclusion that the phrase only makes sense if we interpret it as follows:

> A term is taken significatively if and only if it is taken for (supposits for) *everything* it primarily signifies.

So in fact the phrase 'taken significatively', far from being redundant in the definition, is really the operative phrase. All the stuff at the beginning, with its singular nouns 'its significate', 'a thing outside the soul', and so on, might suggest that a term is in personal supposition provided only that it supposits for *something* it primarily signifies. But that is not enough, and the phrase 'taken significatively' at the end of the definition puts things aright.

I will not here rehearse all the details of my reasoning in favor of this interpretation of the phrase 'taken significatively'.[38] But let me give you a hint. On the other interpretation — and these are the only two reasonable ones — it would follow that the term 'being', since it signifies absolutely everything, would al-

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[37] The retraction occurs in "Ockham's Distinctions between Absolute and Connotative Terms." Professor Calvin Normore was the one who convinced me that I was mistaken.

[38] See the second "problem" discussed in my "Ockham's Rule of Supposition," and the reply in "Ockham's Distinctions between Absolute and Connotative Terms," p. 62 n. 23.

ways be in personal supposition whenever it occurred in a propositional context. And that, as we shall see, is not so. I will give you further examples as we proceed.

ii. Simple Supposition

So much for personal supposition. Ockham defines simple supposition as follows (*Summa of Logic* I.64, § 8):

> Simple supposition occurs when a term supposits for an intention of the soul, but is not taken significatively.

There's that phrase 'taken significatively' again. Notice that if it does not mean what I think it does, then on the other interpretation the term 'concept' could never be in simple supposition. And that will turn out not to be so.

Let me give you an example of the kind of thing Ockham has in mind for simple supposition. For Ockham, recall, there are no real universals or common natures. The only universals for him are universal concepts.[39] And even they are not universal in the sense of being metaphysically shared by many things, as realists want universals to be. They are universal only in the sense that they are concepts *of* many things — they are "general" concepts. Metaphysically, they are just as individual as anything else; they are individual thoughts. They are not universal in the sense of being "in many"; they are universal only in the sense of being "predicated of many." Ockham interprets talk about species and genera as referring to these general concepts, since they are the only plausible candidates, given his ontology.

Hence for Ockham, in 'Man is a species', in the sense in which it is true, the subject term supposits not for some extramental universal or common nature that is the species, but rather for the concept of man, which is a specific concept.[40]

Now notice: In that proposition the term 'man' supposits for an intention of the soul, but it is not taken significatively, since it does not supposit for men there, but for the concept. Hence it is in simple supposition.

On the other hand, in 'Every concept is in the mind', the term 'concept' is not in simple supposition, even though it supposits for intentions of the soul, because there it is "taken significatively." It supposits for all concepts, which is to say, for all its primary significates. It is therefore in personal supposition, not simple.

In principle, the definition of simple supposition we have just seen allows for cases in which a term supposits for any concept, as long as the term is not

---

[39] And universal spoken and written terms. But the latter are universal only in a derivative and parasitic sense; they get their universality from the universal concepts they are subordinated to.

[40] Do not use the term 'specific' loosely when talking about mediaeval philosophy and logic. Here, for instance, a "specific concept" is not just some one, given concept, but a concept at the level of "species" on the Porphyrian tree.

taken significatively. In practice, however, what Ockham seems to have in mind, for spoken and written terms at any rate, is the case in which a term supposits only for the concept *to which it is subordinated*, as in the example I just gave you. Hence, for Ockham, although spoken and written terms do not in general signify the concepts they are subordinated to, nevertheless we sometimes use them in simple supposition to talk about the concepts to which they are subordinated.

iii. Material Supposition

Let us look finally at material supposition. Here is how Ockham defines it (*Summa of Logic* I.64, § 10):

> Material supposition occurs when a term does not supposit significatively but supposits for an utterance or for an inscription.

Notice that if the phrase 'taken significatively' does not mean what I have claimed it does, then on any other reasonable interpretation the term 'utterance' could never be in material supposition.

As an example of material supposition, consider the proposition 'Man is a monosyllable'. In the sense in which that proposition is true, the term 'man' supposits not for individual men, and not for the concept to which it is subordinated, but for itself. And, since it is not taken significatively there, it follows that the term is in material supposition.

On the other hand, in the proposition 'Every utterance takes time to pronounce', the subject term is in personal supposition, not material, because even though it supposits for utterances, nevertheless it is "taken significatively" there, since it supposits for *all* utterances — which is to say, for all its primary significates.

Incidentally, we are now in a position to see what was wrong with Ockham's definition of proper supposition as the supposition of a term for what it "properly signifies."[41] If that were so, then most instances of simple and material supposition would be cases of improper supposition, which seems to be completely contrary to Ockham's intention.

iv. Summary

Here then is the picture we have so far. (For the present I will ignore the distinction between spoken and written language.)

[41] See p. 251 above.

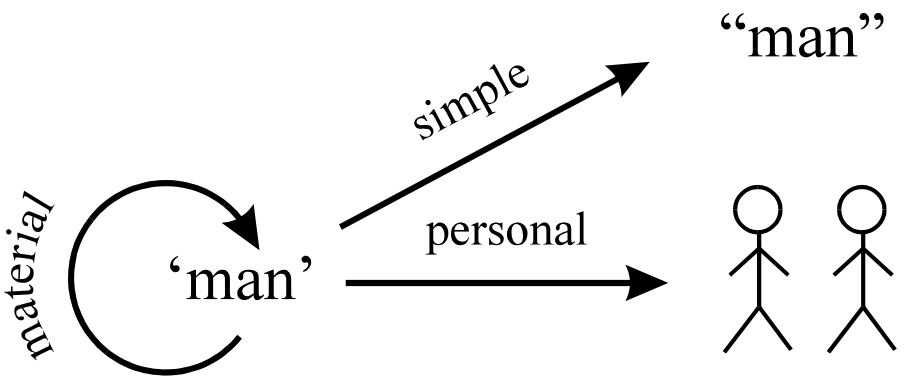

Figure 14: First Approximation of Ockham’s Schema

But actually, the situation is more complicated than this picture suggests. For, as Ockham says (*Summa of Logic* I.64, § (13)), this distinction of three kinds of supposition can also be made in mental language. Hence our picture becomes:

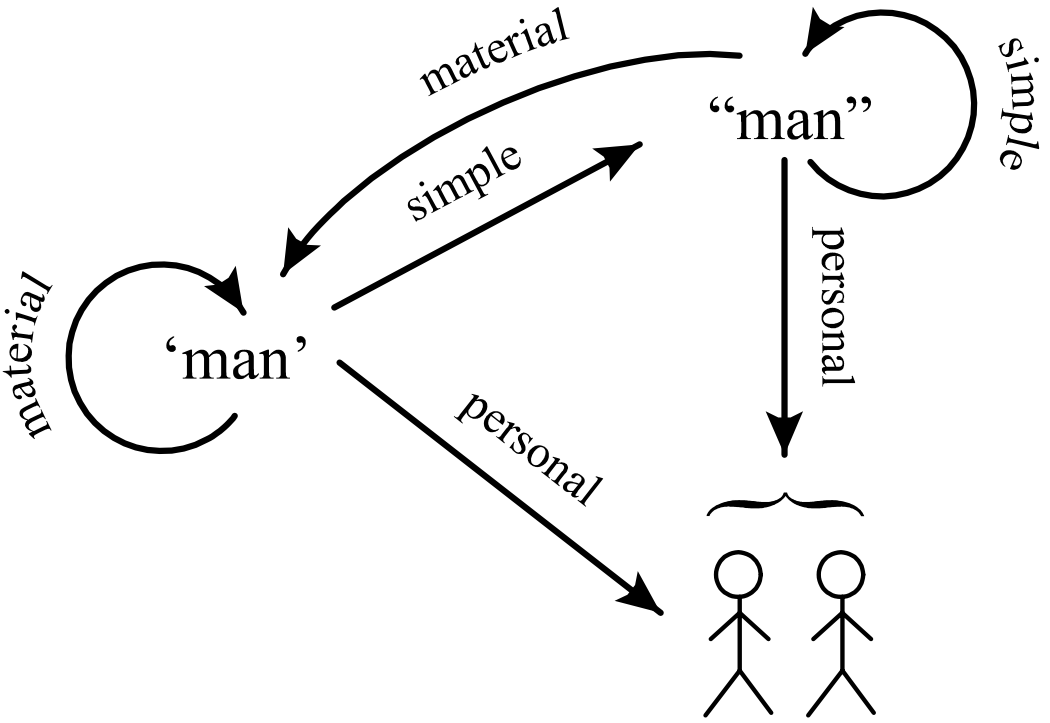

Figure 15: Ockham’s Full Schema

v. Mistaken Interpretations of Ockham’s Division

There are some mistakes to avoid in thinking about Ockham’s division of supposition.

(1) In personal supposition a term always supposits for an external non-linguistic thing.

That's wrong. It is true that whenever a term does supposit for an external non-linguistic thing, it will be in personal supposition.[42] The converse, however, does not hold. There are cases of personal supposition in which the term supposits for a concept, or for a spoken or written expression.

For the same reasons, therefore, it is wrong to think that simple supposition occurs whenever a term supposits for a concept, or that material supposition occurs whenever a term supposits for a spoken or written expression.

(2) Material supposition occurs just whenever a term supposits only for itself. Thus, material supposition corresponds to our modern-day use of quotation marks.

That's wrong too. It is both too broad and too narrow a characterization of material supposition. It is too broad insofar as in mental language a term has simple supposition, not material, when it supposits only for itself. (Refer back to the definitions.)

vi. Refinements in Material and Simple Supposition

It is also too narrow a characterization, for reasons we must now examine. Ockham points out (*Summa of Logic* I.64, § 12) that, if we wanted, we could subdivide material supposition into two kinds, according as the term supposits for a spoken expression (and is not taken significatively) or for a written expression (ditto). But, he says, in fact we lack such a terminology and do not in practice make this finer distinction.

For example, if I say aloud "Man has three letters," then in the sense in which that is true I am referring not to the spoken word 'man' but to the written word. Likewise, if I write 'Cacophony is an ugly word', then in the sense in which it is true I am referring to the spoken word 'cacophony', not to the written word. (The written word is visually rather pleasing, with all its nicely curved letters.)

Both examples would count as cases of material supposition, in accordance with Ockham's definition. And yet in neither case does the term in material supposition supposit for itself.

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[42] Actually, this follows only if we assume that Ockham's three main kinds of proper supposition are intended to be exhaustive. Otherwise, it would be possible for a term to supposit for an external non-linguistic thing and yet not to supposit for everything it primarily signifies (so that it is not "taken significatively"). For example, if the term 'red' supposited only for a certain apple, even though there were lots of other red things too. This case does not fit any of Ockham's three definitions. Ockham does not talk about such cases, presumably because he didn't think they could arise.

Furthermore, it turns out that even if we ignore the distinction between spoken and written language here, there are still at least two quite different kinds of material supposition in spoken and written language (and, correspondingly, two kinds of simple supposition in mental language). First of all, there is the case in which a term supposits for itself or for other tokens of the same type. For instance, 'man' in 'Man is a monosyllable'. This corresponds more or less to our modern-day use of quotation marks.[43] And since we are continuing to ignore the distinction between spoken and written language, we can include here cases in which the written word supposits for the corresponding spoken word or vice versa (as in 'Man has three letters' or 'Cacophony is an ugly word'). These as a group are the kinds of cases we have been talking about so far.

But there are other cases of material supposition in spoken or written language (or of simple supposition in mental language), in which a term supposits for another expression entirely. Consider the true propositions

> *'Hominem esse animal est verum'*
> ('For a man to be an animal is true'), or
>
> *'Quod homo est animal est verum'*
> ('That a man is an animal is true').

The complex subjects of these propositions do not supposit for themselves but for the proposition 'A man is an animal' (or its Latin equivalent), which is a quite distinct, although related, expression. It is the proposition that is true, after all, not the nominal expressions that serve as its name.[44] Furthermore, the subjects of those propositions are not "taken significatively." In virtue of the Additive Principle,[45] they signify just the sum total of what their parts signify — namely, all men and all animals. But they do not *primarily* signify anything at all; there is nothing you can point to and truly say "*This* is for a man to be an animal," or "*This* is that a man is an animal." Hence, if the subjects were taken significatively, the propositions would be false, not true, since they would be affirmative propositions with non-denoting subject terms.[46]

Thus, if the two propositions above are talking about the spoken or written proposition 'A man is an animal', which they very well might, their subjects supposit for a spoken or written proposition and are not taken significatively. Hence they are in material supposition and yet are not quotations of themselves or of anything like themselves. Thus the claim that material supposition amounts to quotation is too narrow. And of course a similar thing happens with simple supposition for concepts in mental language.

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[43] I say "more or less" because quotation-mark conventions are not all that clear in contexts where we are distinguishing tokens of the same type.

[44] Recall that there are no *complexe significabilia* in Ockham's ontology. See Ch. 6, pp. 165–167, above.

[45] See Ch. 6, p. 166, above.

[46] See Ch. 6, p. 170, above.

John Buridan points out that we do not always use infinitival expressions in the way illustrated by the first proposition above. He observes[47]:

> But sometimes such an expression supposits personally, and is taken significatively whether it supposits or not.[48] For instance, if I say 'For a man to be white is for a man to be colored',[49] 'To cut is to act', 'To be cut is to be acted upon or to suffer'.

Here it is clear that we need a quite different account of what is being said and of what is being referred to by those infinitival expressions. We are definitely not saying that the proposition 'A man is white' is the proposition 'A man is colored'.[50]

b. Burley's and Other Authors' Divisions

Now let us turn briefly to Burley and some of the other authors displayed in the *Supplement* to this chapter. Most of these people seem to have little to say about mental language. Mental language was of interest mainly to the nominalists, for reasons I have discussed above.[51] But Burley and most of the other authors in our *Supplement* were of a predominately realist persuasion, at least as far as we can tell. Hence we can ignore the complications about the supposition of concepts in mental language.

I used to think there was a fairly simple way to link Ockham's views with Burley's more traditional approach: First, **(1)** recognize the metaphysical disagreement, that Burley took universals or common natures to be real entities in their own right; and then **(2)** recognize that in addition Burley, unlike Ockham, held the psychologico-epistemological claim that terms signify those genera and species and not the individuals of which they are the genera and species.[52] Thus instead of Ockham's picture (here it is again)

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[47] John Buridan, *Sophismata*, Ch. 3, Scott ed., pp. 51; Scott trans., p. 50.

[48] This probably means "whether there *is* any thing for which it supposits or not."

[49] This of course has nothing to do with 'white man' and 'colored man' in the modern, racial sense. In the present context, whiteness is a color like any other color, and something that is white is *ipso facto* colored.

[50] For Buridan's account of how such expressions work in contexts like this, see Ch. 6, pp. 176–177, above. Ockham takes no account of them.

[51] See Ch. 5, p. 147, above.

[52] See Figure 10 (Ch. 5 above, p. 143), and the discussion surrounding it. See also Spade, "Walter Burley on the Simple Supposition of Singular Terms."

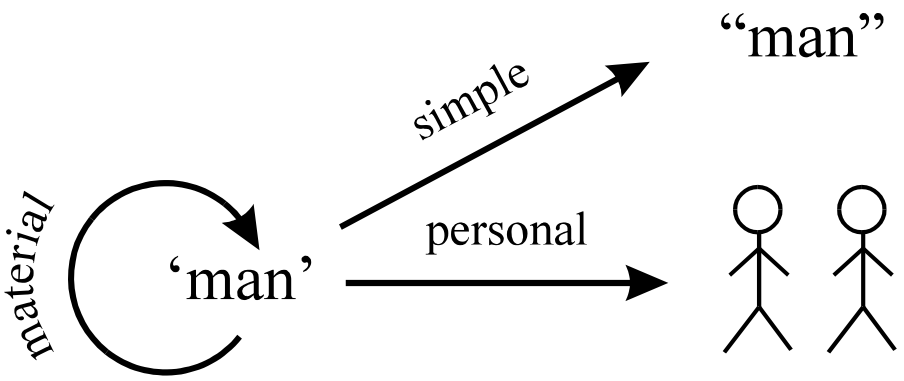

Figure 16: Approximation of Ockham's Schema (Again)

we get

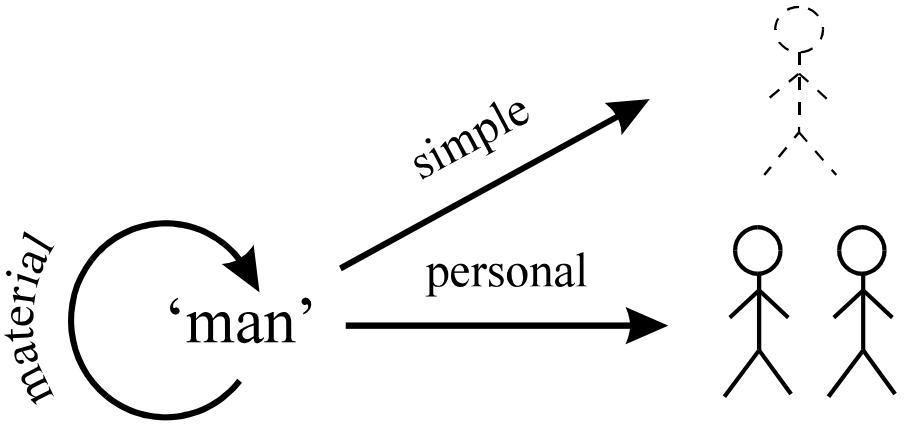

Figure 17: Approximation of Burley's Schema

But while that recipe is all right for some heuristic purposes, the situation is in fact more complicated. For example, Burley explicitly holds that, for what he calls "discrete simple terms" (proper names will qualify), simple supposition and personal supposition coincide[53]:

> In [the case of] a discrete simple term, simple and personal supposition do not differ. Rather such a term suppositing simply and suppositing personally supposits for entirely the same [thing].

We saw nothing like this in Ockham. In personal supposition, the term 'Socrates' (a "discrete simple term") supposits for Socrates the man, according to both Ockham and Burley. For Burley, however, the term also supposits for ex-

[53] Burley, *De suppositionibus,* § 2.4; Spade, trans., § 29. For what Burley means by "discrete simple terms," see Spade, "Walter Burley on the Simple Supposition of Singular Terms."

actly the same thing, for Socrates himself, in simple supposition. Thus simple supposition is not always supposition for a universal on Burley's view.[54]

Again, Burley defines simple supposition as the kind that occurs when a term supposits for its significate[55]:

> But supposition is simple when a common term or an aggregated singular [term] supposits for what it signifies.[56]
>
> As for the first point, I say that supposition is simple when a common term supposits for its first significate or for everything contained under its first significate, or else when a singular concrete term or a singular compound term supposits for its whole significate.[57]
>
> … when a common term or a concrete singular term or an aggregated singular [term] supposits for what it signifies, it has simple supposition, …[58]

As a result, he cannot (and does not) use the phrase 'taken significatively' in the way Ockham does in his characterizations of the various branches of supposition.

For Burley, then, it is in general in simple supposition, not personal supposition, that terms supposit for what they signify.

As for material supposition, Burley defines it as occurring (*Purity,* § 9):

> when an utterance supposits for itself or for another utterance that is not inferior to it.

The second disjunct is meant to accommodate cases like 'For a man to be an animal is true', which we discussed above.[59] The clause 'that is not inferior to it' in effect does the work of Ockham's phrase 'not taken significatively', insofar as terms can be truly predicated of — and so, for Ockham, primarily signify — their "inferiors."[60]

Nevertheless, the results are not exactly the same as Ockham's. For Burley goes on to indicate that, despite what is syntactically the most natural way of reading the definition, according to which that clause 'that is not inferior to it' modifies 'another utterance', it in fact modifies *both* disjuncts (*Purity,* § 10):

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[54] It is worth pointing out that Burley is not saying here that a "discrete simple term" like 'Socrates' supposits in simple supposition for an "individual nature" (for example, for "Socrateity"), if that is interpreted as anything other than just the individual Socrates himself. So we cannot just suppose that, for Burley, while personal supposition is for individuals, simple supposition is for natures — universal or individual natures, depending on the case. That won't work.

[55] Actually, things will be more complicated, as the various parts of the following definitions suggest. For a discussion, see *ibid.*

[56] Burley, *Purity,* § 13.

[57] *Ibid.,* § 28.

[58] *Ibid.,* § 41.

[59] Compare pp. 259–260, above.

[60] On the "inferiors" of a term, see Ch. 5, p. 145, above.

> Now I said that supposition is material when an utterance supposits for itself or for another utterance "that is not inferior to it." For an utterance sometimes does supposit for something inferior to it, and in that case it supposits personally, whether what is inferior is an utterance or whether it is a thing or a concept …

Hence, for Burley, in the proposition 'Being is a participle' the subject does not have material supposition, because the term 'being' can be truly predicated of itself just as much as it can be predicated of anything else.[61] For Ockham, the term does have material supposition there.

As for personal supposition, Burley defines it as occurring when (*Purity,* § 12):

> …when a term supposits for its suppositum or supposita or for some singular of which the term is accidentally predicated.

The "supposita" here are not just whatever the term happens to supposit for, so that the whole thing would reduce to a tautology. Instead the term is used here in its etymological sense: what is "put under" the term — in short, it "inferiors."[62]

The last clause of the definition, about a "singular of which the term is accidentally predicated," is meant to accommodate certain funny but very interesting cases that need not detain us here.[63]

Although the details vary quite a bit from author to author, Burley's theory, not Ockham's, is the one that more closely resembles the theory in earlier people. For instance, Peter of Spain (Texts **(21)**–**(22)**), Lambert of Auxerre (Text **(24)**), William of Sherwood (Text **(28)**), and Roger Bacon (Text **(30)**).

Notice that Peter of Spain makes no mention at all of material supposition. Bacon has it, but he doesn't call it that; for him it is just one branch of simple supposition. Lambert's definition of simple supposition seems to include what others call material supposition, but his actual discussion of simple supposition does not.

Note also that the fifteenth century Paul of Pergula omits simple supposition entirely. Buridan, who was a nominalist, has it in effect, but treats it as just one kind of material supposition (Text **(54)**). Just as Ockham didn't think there was any compelling reason to distinguish spoken from written language when it came to material supposition, so too Buridan apparently didn't think there was any special reason to single out mental language with its own "simple" supposition. For Buridan, it's all just material supposition. Several other authors did this too.

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[61] Although it is terminologically odd to say so, this means that the term is "inferior" to itself.

[62] Compare n. 15 above.

[63] See Spade, "Walter Burley on the Simple Supposition of Singular Terms."

c. Subdivisions of Simple Supposition

Some realist authors, like Burley and William of Sherwood, show a marked tendency toward a proliferation of subdivisions of simple supposition.[64]

What seems to be going on in these cases is this. There are a number of problematic propositions where terms don't seem to fit into any of the major divisions of supposition as described so far. For instance, consider the proposition 'Man is the worthiest of creatures'. Let's just all agree that there is a sense in which that proposition is supposed to be true; man is the pinnacle of creation, let us say (we won't be the first to do so).[65]

All right, in the sense in which the proposition is true, what does its subject term supposit for? It certainly doesn't supposit in material supposition for the term 'man', whether spoken or written. Terms, as mere pieces of language, are pretty insignificant when it comes to "worthiness." Likewise, the subject doesn't supposit for the species man either, whether you interpret that as a concept or as a real common nature or universal. Any individual is arguably worth more than a concept or a common nature or universal is.[66]

On the other hand, the proposition doesn't seem to be saying merely that some one individual human being is the worthiest of creatures. We wouldn't count the proposition as true in the intended sense if there turned out to be one exalted human being who won the prize for worthiness among creatures, but all the other human beings were no-account low-grades.

Neither does the proposition seem to be saying that all human beings are the worthiest of creatures, that somehow the competition ends up in a tie among the whole human race. We want to continue to allow gradations of metaphysical worth even within the human species.

Rather, what the proposition appears to mean, in the sense in which we are saying it is true, is that, taken as a group, man is the worthiest of creatures. But what does that mean? How does it fit into the three kinds of supposition we've got so far? We have no recognized branch of supposition in which terms supposit for things "taken as a group."

Ockham's general strategy for problems like this is to look to mental language, and to translate such recalcitrant propositions in spoken or written language into less problematic correlates in mental language. In effect, he is making a distinction a little like the modern distinction between the "surface structure" and the "deep structure" of language.

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[64] See the diagrams in the *Supplement* at the end of this chapter.

[65] We're talking about some kind of metaphysical "worthiness" here, not moral uprightness. Unfortunately, human beings — particularly some I know — score rather low on the latter scale.

[66] You might wonder about that claim, but this is only an example. Think of the individual as adding some "individual perfection" onto whatever perfection it has in virtue of the species it belong to.

In the case of 'Man is the worthiest of creatures', Ockham says (*Summa of Logic* I.66, § 2,[67] and reply §§ 7–11) that the spoken or written proposition is subordinated to some such mental proposition as

> [Every] man is worthier than any corporeal creature is that is not a man.[68]

It is this, Ockham says, that we really "intend" when we say aloud, or write, 'Man is the worthiest of creatures'.

Many of the authoritative statements in Scripture and the Church Fathers are like this, Ockham says (§ 11). They are false if you take them at face value. Hence you must look instead at the "intention" of the authors, at what they really meant. And that means speculating about what they were saying in mental language.

This is obviously a strategy that will allow you to get by with an awful lot. Nevertheless, it is not a strategy that is available to you unless you take the notion of mental language seriously to begin with. Thus, realists — who, I have said,[69] in general have little to say about mental language — sometimes try to handle these problematic propositions instead by introducing various distinctions at the surface level, dividing and subdividing the branches of supposition as needed.

Usually, this involves dividing simple supposition. Both William of Sherwood and Burley, for instance, have three kinds of simple supposition.[70] The distinctions are delicate, and it is not clear whether they have the same three.[71]

Sometimes, it seems to me, this "surface level" approach is clumsy and doesn't really work very well. But sometimes it demonstrates a nice sensitivity to nuances. Burley, for instance (*Purity,* § 47), asks about the true proposition 'Substance is properly defined' — that is, it has a real, not just a nominal definition.[72] It is not the word that is defined here, since we're talking about real definition. And it is not individual substances that are defined either, since the standard Aristotelian view was that individuals do not have real definitions. On the other hand, neither can the universal category *substance,* which is what is signified by the term 'substance', have a real definition, since real definitions proceed in terms of genus and species and there is no higher genus in which to put the category *substance.*[73] Thus, it appears that the word 'substance' in the proposition 'Substance

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[67] Ockham discusses the proposition in the form 'Man is the worthiest creature among creatures'. The odd phrase just means "the worthiest creature of them all."

[68] That's my paraphrase. See Ockham, *Summa of Logic* I.66, § 10. The restriction to corporeal creatures is meant to rule out angels, who may be even worthier than human beings. (Ockham would have got some argument about that last claim.)

[69] See Ch. 5, p. 147, above.

[70] See the *Supplement* at the end of this chapter.

[71] For Burley's account, see Spade, "Walter Burley on the Kinds of Simple Supposition."

[72] On real and nominal definitions, see Ch. 7, pp. 206–214, above. Ignore all the Ockhamist machinery there, since Burley doesn't use it. For simplicity, let's assume that we're talking about what Ockham calls "real metaphysical definitions in the strict sense" (*ibid.,* pp. 207–209), which proceed by genus- and species-terms all in the nominative case.

[73] Recall that categories are "most general genera."

is properly defined' can have neither material, personal nor simple supposition. Yet the proposition is true, since we can define *man* and *animal,* and they are substances.

Burley tries to solve this difficulty by appealing to a subtype of simple supposition.[74] You will have to decide for yourself whether his solution works, but in any event his discussion shows an awareness of a nice problem.

d. Additional Questions

i. Problems about Ockham's Account of Supposition in Mental Language

There are some difficulties with Ockham' theory of supposition in mental language. For example, Kneale and Kneale point out[75] that the very notion of material supposition in mental language is problematic for Ockham's account. A term in material supposition in mental language would have to be a concept that supposits for a spoken or written expression without suppositing for everything it signifies (without being "taken significatively"). For example, consider the mental proposition "Man has three letters," where the subject term is not the concept of the written term 'man', which is what has three letters after all, but rather the concept "man" by which we conceive Socrates and Plato and other people.

That is certainly an odd theoretical picture. Yet Ockham explicitly says this kind of thing can occur (*Summa of Logic* I.64, § 13)):

> Now just as such a diversity of [kinds of] supposition can belong to a spoken and a written term, so too can it belong to a mental term. For an intention can supposit for what it signifies, for itself, for an utterance and for an inscription.

In fact, however, when you think about it, the whole notion of different kinds of supposition in mental language seems unworkable. Consider the mental proposition "Man is an accident," in which the subject is the concept "man" whereby we conceive individual human beings and that supposits in that proposition in simple supposition for itself. That proposition, so taken, is true.[76] But what can we learn from it? What do we know when we form that proposition in our mental language and assent to it? What epistemological function does it perform?

Well, surely it ought to tell us, we ought to know by means of it, that man is an accident — that is, that the concept "man" is an accident. But how is it that we can know that by means of this proposition? After all, the subject of the

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[74] He calls it "special compared simple supposition." See Spade, "Walter Burley on the Kinds of Simple Supposition."

[75] William and Martha Kneale, *The Development of Logic,* p. 269.

[76] Ockham came to regard concepts as mental acts, and so as accidents in the category of quality.

proposition, the concept "man," signifies individual human beings, not concepts. So when we have that concept in mind, we are thinking of individual human beings, not of concepts. How then can that mental proposition tell us that the concept "man" is an accident?

In other words, if a proposition is going to do epistemological duty, it can only tell us about what it makes us think of; it cannot inform us about anything else. Now if a mental proposition "makes us think of" something, then it signifies that thing.[77] But, according to Ockham, a mental proposition can signify something only if some categorematic constituent term of the proposition signifies that thing.[78] So in general, if mental propositions are going to do epistemological duty in the "language of thought," it seems their categorematic terms are going to have to be in personal supposition, not in material or simple supposition.[79]

I therefore offer the following thesis, which explicitly goes against Ockham's express doctrine, but which I think he should have held: *All supposition in mental language is personal supposition*.

Peter of Ailly explicitly accepted this consequence in the *Concepts* part of his *Concept and Insolubles*[80]:

> It can be inferred also that since a mental term properly so called is always taken naturally in a mental proposition, [that is,] for the thing it ultimately properly signifies naturally, therefore it always supposits for its ultimate significate. It always supposits personally, never materially …[81]

So did Buridan[82]:

> Therefore, you have to know, as it seems to me, that material supposition does not occur except by reason of a significative utterance. No term in a mental proposition supposits materially, but always personally. For we do not use mental terms at will, as we do utterances and inscriptions. The same mental expression never has diverse significations or ways of being taken. For the passions of the soul are the same for all, and so are the things of which they are the likenesses, as the first part of the *On Interpreta-*

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[77] See Ch. 3, p. 63, above.

[78] Recall the "Additive Principle" in Ch. 6, p. 166, above.

[79] There are funny cases. For example, no matter what kind of supposition the concept "being" has in a mental proposition, it will signify what it supposits for (since it signifies absolutely everything). So the argument I just gave will not without further ado rule out material or simple supposition there. But Ockham appears to want his three kinds of supposition to be possible for any mental term, not just for "funny ones."

[80] Peter of Ailly, *Conceptus et insolubilia,* fol. 5^{vb}; Spade trans., § 68 (p. 29).

[81] Note that Peter does not generally distinguish between material and simple supposition. See Spade, *Concepts and Insolubles,* § 67 (p. 29), and p. 112 n. 215. Note also that the claim in this paragraph is a rather odd thing for Peter to be saying, since he holds that categorical mental propositions properly so called do not have any real parts. See Ch. 4, pp. 128–130, above.

[82] See Sten Ebbesen, "The Summulae, Tractatus VII: De fallaciis," p. 156.

> *tion* has it [1, 16[a]6–8]. Hence, I say that the mental proposition corresponding to the proposition 'A man is a species', insofar as it is true, is not a proposition in which the specific concept of men is made the subject. Rather it is a proposition in which the concept whereby the specific concept of men is conceived is made the subject. And that surely supposits not for itself but for the specific concept of men.

In short, only if the terms of mental proposition supposit personally do we in general "know what we are thinking." Here is the argument in a nutshell:

> **(1)** The concept of a thing is the very act of thinking about that thing.[83]
>
> **(2)** Therefore, we cannot think about a thing except by means of a concept of that thing.
>
> **(3)** Concepts signify what they are concepts of.
>
> **(4)** Therefore, we cannot think about a thing except by means of a concept that signifies that thing.
>
> **(5)** Therefore, if we want to say in mental language that the concept "man" is an accident, we must use *not* the concept "man," but rather the concept *of* the concept "man."[84]

This means that when we utter the spoken proposition 'Man is an accident' with the subject term in simple supposition, the proposition as a whole is subordinated to a mental proposition in which the subject is not, as you might expect, the concept "man" to which the spoken subject 'man' is subordinated, but rather the concept *of* that concept. Note that in such cases the subordination of the whole spoken proposition is not a function of the subordination of its parts.[85]

I think we are led to this conclusion, despite Ockham's explicit statement that all three kinds of supposition can occur in mental language, by following out the implications of: **(a)** Ockham's definition of personal supposition in terms of signification; **(b)** the notion of signification as an epistemological relation; **(c)** the epistemological role of mental language as the vehicle of thought.[86]

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[83] Not everyone held this *"intellectio"*-theory, but Ockham came to hold it. See Ch. 5, pp. 156–160, above. In any case, everyone would have held the next step of the argument, even if not for this reason.

[84] Note that the conclusion follows even if you don't hold that concepts are mental accidents — you think the mental proposition is false.

[85] Recall our discussion of Robert Fland in Ch. 4, pp. 90–93, above.

[86] Some of the issues I've just been raising were discussed also in Spade, "Synonymy and Equivocation in Ockham's Mental Language," pp. 17–22.

ii. The "Rule of Supposition"

Here is another question for you: How do you tell which of the three main kinds of supposition a term has on any given occasion? That is, how do you tell what a term is referring to, since there is more than one possibility?

Several authors addressed this point, and gave what I call a "Rule of Supposition" for resolving the question.[87] The actual content of the rule varied from author to author. But most of them — Paul of Pergula is an exception[88] — seem to have held that the predicate terms of propositions always have personal supposition, whereas subjects may have one or another kind of supposition, depending on the semantic kind of the predicate term. Let us confine ourselves here mainly to Ockham's and Burley's versions of the rule. (See Ockham, *Summa of Logic* I.65; Burley, *Purity,* §§ 42–44.)

For both of these authors, subject terms can have personal supposition in any context whatever. But they can have material or simple supposition only if the predicate is semantically appropriate — that is, the sort of term that can be truly predicated of what the subject term supposits for in material or simple supposition.

Thus in 'Man is an animal', the subject term 'man' can have only personal supposition, while in 'Man is a monosyllable' it can have either material or personal supposition, and in 'Man is a species' it can have either simple or personal supposition. (In the last two cases, the proposition will be false if the term is taken in personal supposition, but that doesn't matter.) For Ockham, in 'Man is a common name', the term can have any of the three types of supposition, insofar as **(a)** it can always have personal supposition, and insofar as the predicate 'common name' can be truly predicated both of **(b)** spoken and written expressions and of **(c)** mental common names — that is, general concepts. For Burley (and for Ockham), in 'Man is a being', the subject can likewise have any of the three kinds of supposition.

Some propositions are therefore ambiguous because their subjects may have more than one kind of supposition. Both Ockham and Burley say this explicitly, and warn that such propositions have to be "distinguished" according to their various senses.

In a way there is an obvious bias in these rules, a bias in favor of personal supposition. A term can always be taken in personal supposition, but in simple or material supposition only in special contexts. Personal supposition, therefore, becomes the "normal" kind of supposition.[89]

Ockham explicitly allows this kind of ambiguity or equivocation in mental language. Thus (*Summa logicae* III–4.4)[90]:

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[87] See Spade, "Ockham's Rule of Supposition."

[88] *Ibid.,* pp. 72–73.

[89] Paul of Pergula and Richard Lavenham have rules that do not exhibit this feature; for them, terms cannot have personal supposition in all contexts. See Spade, "Ockham's rule of Supposition," pp. 71–73.

[90] Gál *et al.,* ed., p. 763.113–118.

> And it must be noted that this third mode of equivocation can be found in a purely mental proposition, although the first two modes have no place except among signs instituted by convention.[91] Thus the mental proposition "Man is a species" can be distinguished insofar as the subject can supposit significatively or for itself …

The fact that Ockham explicitly says this, however, does not lessen the fact that it conflicts with other features of his doctrine. In Ch. 4, I gave you what I consider a pretty conclusive argument that there is no equivocation of any kind in mental language: in effect, there is nothing equivocation there could be.[92] In this respect, it seems to me that Buridan's and Peter of Ailly's theory, that all supposition in mental language is personal, is the better one.

iii. Supposition Theory as the Basis for a Theory of Truth Conditions

There is one last but very important point to be made about this first half of supposition theory. Some authors, although by no means all, give an explicit theory of truth conditions for categorical propositions in terms of the theory of "supposition proper," as we have called it, the first of the two parts into which T. K. Scott divided supposition theory.[93] It is worth emphasizing, for reasons we shall see in Ch. 9 below, that this is a theory of truth conditions that has nothing at all to do with the doctrine of "descent to singulars," which will be a big feature of the theory of "modes of personal supposition."

Such an account of truth conditions is by no means a regular part of the theory of supposition proper. There is nothing like it, for instance, in William of Sherwood, Roger Bacon, Peter of Spain, Lambert of Auxerre, Walter Burley, Richard Lavenham or Paul of Pergula. On the other hand, we do find it in Ockham's *Summa logicae,* II.2–4 (Texts **(43)–(45)**), and in Ch. 2 of Buridan's *Sophismata,* conclusions 10–14 (Text **(70)**).

It will help to understand Ockham here if you recall that in personal supposition a term is "taken significatively" — that is, supposits for all its significates.[94] Thus in 'Some man is tall' the term 'man' supposits for all men, not just for the tall ones, and the term 'tall' supposits for all tall things, not just for tall men.

Given this, Ockham says that a universal affirmative, 'Every *A* is a *B*', is true iff the predicate supposits for everything the subject supposits for — maybe for more besides, but for at least those things. A particular affirmative, 'Some *A* is

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[91] On the three "modes" of equivocation, see Spade, "Ockham's Rule of Supposition," p. 65 n. 7, and Spade, "Synonymy and Equivocation in Ockham's Mental Language," pp. 15–22.

[92] See Ch. 4, pp. 101–102, above. See also, Spade, "Synonymy and Equivocation in Ockham's Mental Language," pp. 19–20.

[93] See p. 243, above.

[94] See p. 254 above.

B', is true iff the predicate supposits for something the subject supposits for. And so on. One can easily go around the "square of opposition" and generate appropriate truth conditions in this way.

Buridan's statement of his corresponding rules is a little more careless than Ockham's. But the effect of the rules seems to be exactly the same.

This account of truth conditions of course sounds very much like what we do today when we give truth conditions for formal languages in terms of set-theoretic relations among the denotations or extensions of the terms in a proposition. And to some extent, I suppose, it is all right to think of think of the mediaeval theory in those terms, provided we keep two things clearly in mind:

First, Ockham and Buridan (and anyone else who had such a theory) were not really proceeding set-theoretically. Their theories were put in terms of supposing for all or some or none of the same things, not in terms of "inclusion," "intersection" or "exclusion," and they carry no commitment to the existence of things like the null set, power sets, and so on.[95] In effect, what I saying is that Ockham and Buridan were not proceeding set-theoretically in any way that goes beyond what is sometimes called "virtual set-theory" or the "virtual theory of classes."[96]

Second, we have to remember that all affirmative propositions were taken in the Middle Ages with "existential import" — they were false if their subjects were non-denoting.[97] The most natural and normal way of expressing truth conditions set-theoretically does not have this feature.

C. Additional Reading

For additional reading on the material covered in this chapter, see: T. K. Scott, "Introduction" to John Buridan, *Sophisms on Meaning and Truth,* pp. 29–35; Paul Vincent Spade, "Walter Burley on the Kinds of Simple Supposition," "Walter Burley on the Simple Supposition of Singular Terms," "Ockham's Rule of Supposition: Two Conflicts in His Theory," "Synonymy and Equivocation in Ockham's Mental Language." (You can tell whose work in this field I like best.)

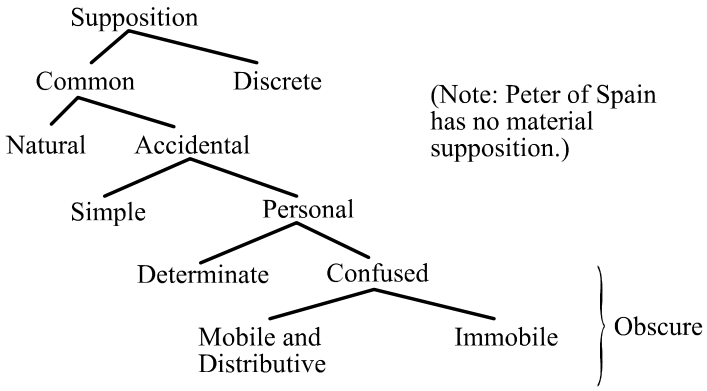
[95] If you don't know this lingo, just skip it.

[96] See Quine, *Set Theory and Its Logic,* p. 16: "Much, however, of what is commonly said of classes with the help of '$\in$' [the notation for class-membership] can be accounted for as a mere manner of speaking, involving no real reference to classes nor any irreducible use of '$\in$'." (The technical distinction between classes and sets is irrelevant to anything that concerns us here.)

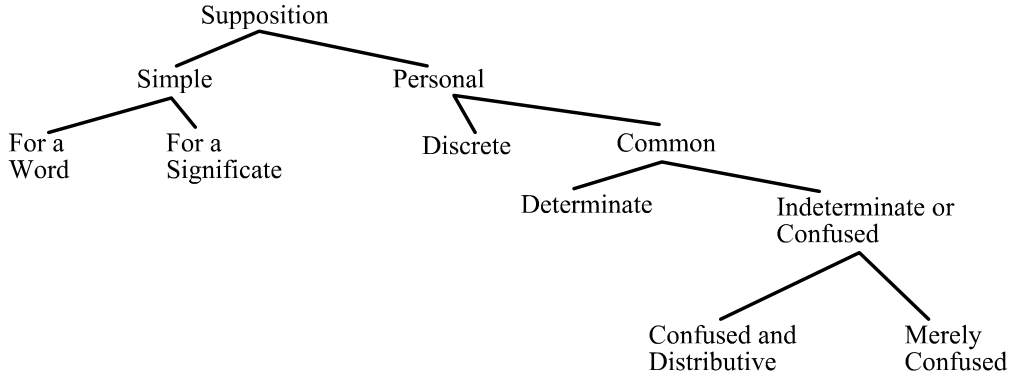
[97] On existential import, see Ch. 2, p. 17, above. Recall also that negative categoricals were taken as *not* having existential import, as they had better be if they are going to be the contradictories of affirmatives.

D. Supplement: Diagrams of the Divisions of Supposition Proper

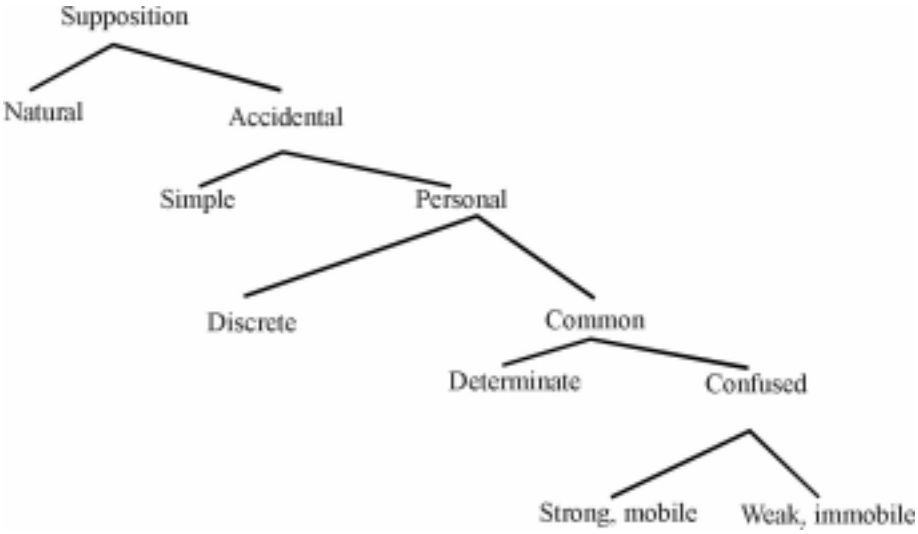
Peter of Spain's Division:



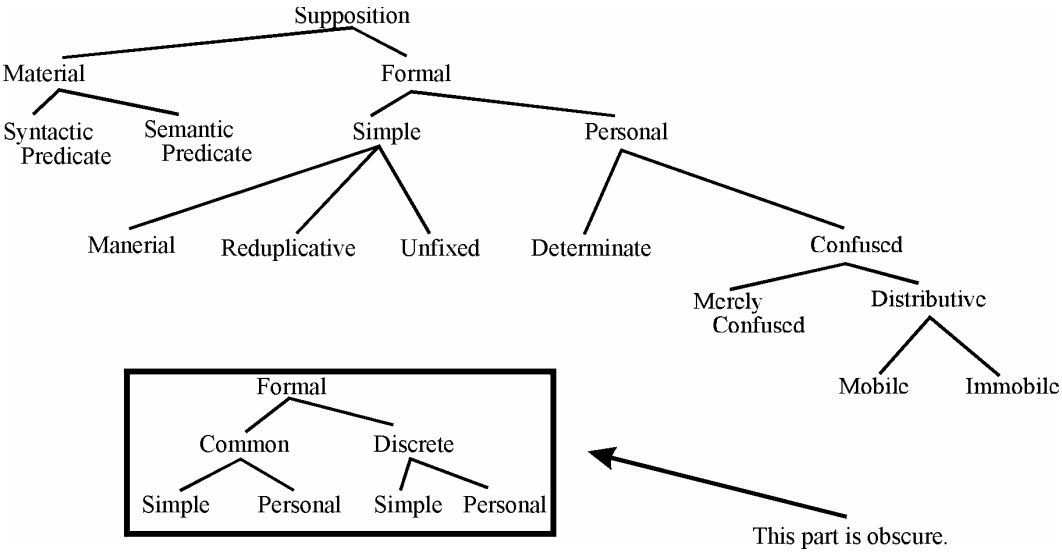
Roger Bacon's Division:



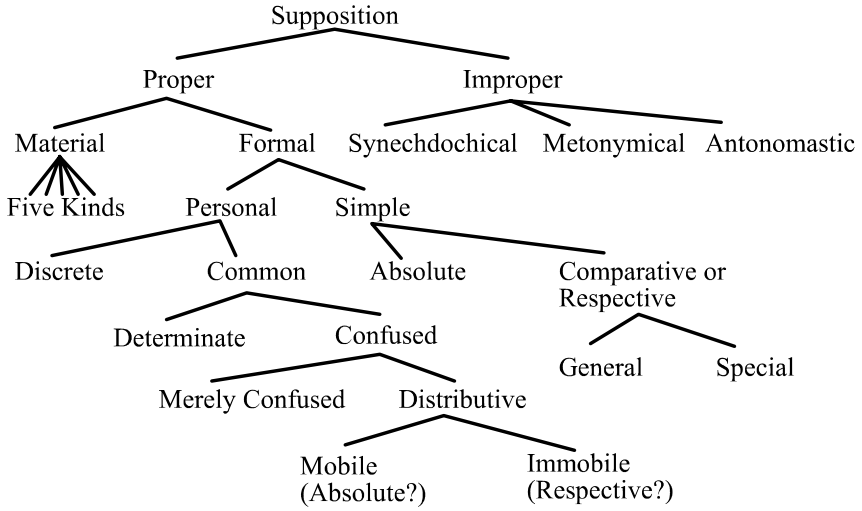
Lambert of Auxerre's Division:



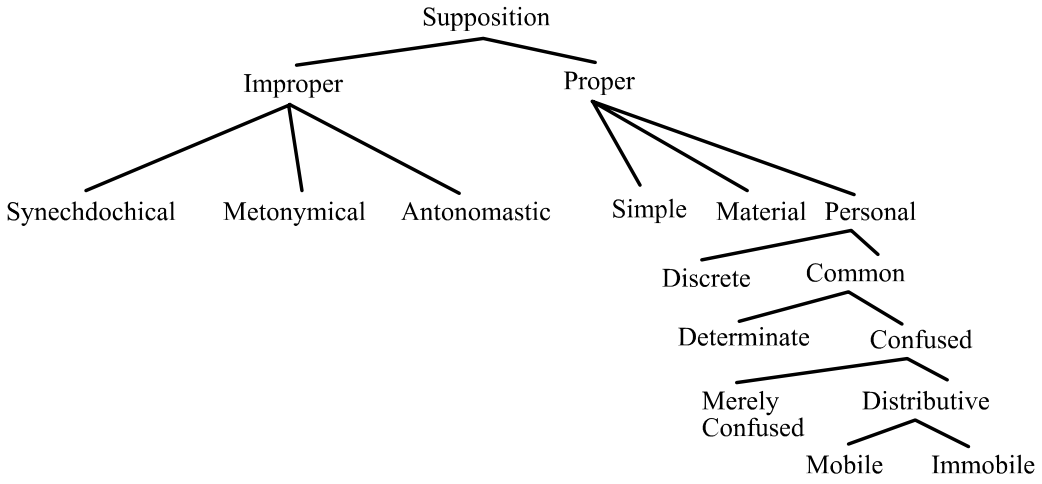
William of Sherwood's Division:



Walter Burley's Division:

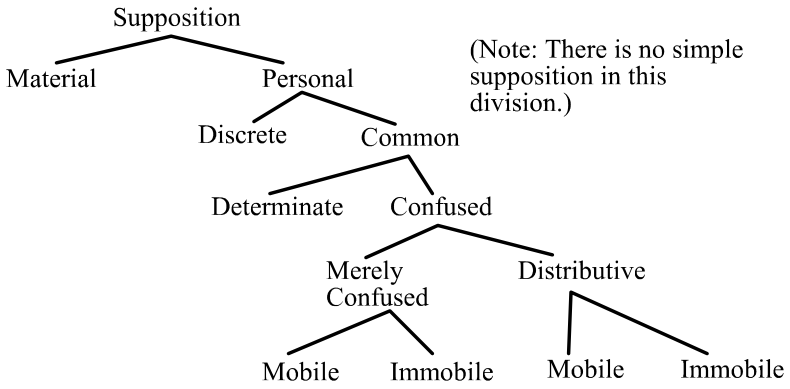


The "Ockhamist" Division"



Variations: Albert of Saxony makes no mention of improper supposition. For Richard Lavenham, *mobile = confused and distributive*, and *immobile = merely confused*.

John Buridan's and Paul of Pergula's Division:



Variation: Buridan omits the distinction *mobile*/*immobile*.

Chapter 9: The Ups and Downs of Personal Supposition

In Chapter 8, above, we discussed the theory of "supposition proper," the first half of supposition theory according to the distinction drawn by T. K. Scott in the "Introduction" to his translation of Buridan's *Sophismata.*[1] In the present chapter, we will discuss the second half of supposition theory, what Scott calls the doctrine of "modes of supposition."[2]

The first thing you must realize is that the theory of "modes of supposition" is a theory that applies to personal supposition only — that is, to that kind of supposition wherein, for instance, the term 'man' supposits for all human beings, not for the spoken or written word 'man', and not for the concept "man" or the universal nature *man.*

The theory of modes of supposition is a theory that divides personal supposition into branches and subbranches. It is therefore, first of all, a classification schema. Just how did this classification go, and what was the point of it?

The second question, oddly enough, is one of the big mysteries in this business. But the answer to the first question, although complicated, is relatively clear. So let's begin there.

A. The Branches of Personal Supposition

Look back at the *Supplement* to Ch. 8, above. Notice that under personal supposition, everyone there, with the exception of William of Sherwood and Peter of Spain, has a division like this:

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[1] Scott, "Introduction" to Buridan, *Sophisms on Meaning and Truth,* p. 30.

[2] Remember that this is Scott's name for it, not a mediaeval one; they didn't draw the distinction. Much of what I say in this chapter is a more extended and less technical version of material presented in Spade, "The Logic of the Categorical." For any serious work on what I am talking about in this chapter, you will have to go look at that paper.

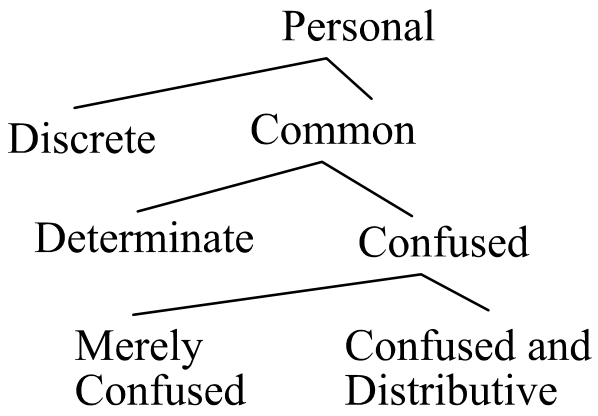

Figure 18: Branches of Personal Supposition

As always with these things, there are variations. Lambert of Auxerre (Text **(25)**), for example, uses the terms 'weak' and 'strong' for 'merely confused' and 'confused and distributive', but the idea seems to be pretty much the same.

Some authors divide confused and distributive supposition into mobile and immobile supposition. Others appear to have simply taken those terms as mere equivalents for 'confused and distributive' and 'merely confused', respectively. For example, Richard Lavenham and Robert Fland, both in the second half of the fourteenth century. Paul of Pergula divides both confused and distributive and merely confused supposition into mobile and immobile. I will have little to say here about mobile and immobile supposition, and will concentrate instead on things down to that point in the diagram.

Let us look first at discrete supposition. For Sherwood, at least insofar as I understand what he says, there is some question about just where discrete supposition fits on the schema. And for Peter of Spain, discrete supposition is not a branch of personal supposition at all, but rather a prior branch, before we come to the division into personal and simple supposition as species of "common" supposition.[3]

Well, what then is discrete supposition? In a word, it is the kind of personal supposition "discrete terms" have — that is, proper names (like "Socrates', 'Plato'), demonstrative pronouns (like 'this', 'that'), and demonstrative phrases (like 'this man', 'that animal'), etc.[4]

Recall that a "singular proposition" is a categorical proposition in which the subject term is one of these discrete (or "singular") terms.[5] Hence the subjects of singular propositions will always have discrete supposition.[6]

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[3] Note also that Peter of Spain does not recognize material supposition.

[4] Note that since Latin lacks a definite article, there is no real equivalent to the modern notion of a "definite description" (for instance, 'the dog on the porch'), although a pretty close equivalent can be constructed by using demonstrative phrases and relative clauses ('that dog which is on the porch').

[5] See Ch. 2, p. 14, above.

Discrete supposition will be absolutely central to the theory. The other modes of personal supposition are going to be cashed out in terms of discrete supposition, to be in a sense "reduced" to it.

As distinct from discrete supposition, the other modes of personal supposition all count as kinds of "common" supposition. They are the kinds of personal supposition a term can have if it is not a discrete term — in short, if it is a "common name." There are three main kinds of common personal supposition: determinate supposition, confused and distributive supposition,[7] and merely confused supposition.[8]

1. Syntactical Rules

How are these three kinds of common supposition distinguished from one another? Well, we find two main approaches. On the one hand, sometimes they are distinguished syntactically, in terms of the position of a term in a proposition. On the other hand, sometimes they are distinguished in terms of an elaborate theory of "descent and ascent," which we will look at in a moment.

The syntactical rules are complex. They tell you, for instance, that a common name has a certain one of these three kinds of personal supposition depending on whether the term is subject or predicate in one of the standard **A-**, **E-**, **I-** or **O-**forms,[9] whether it falls within the scope of a quantifier or negation or certain other operators, etc. The possibilities are endless, of course, and so it is not surprising that the rules one finds are never really adequate to cover all the cases one actually encounters. Perhaps the most extensive list may be found in Albert of Saxony's *Perutilis logica.*[10] I quote them at some length here, just to give you idea of how complex things can get. Here we go:

1. The subject of any singular proposition supposits discretely.
2. In an indefinite proposition the subject supposits determinately.
3. The subject of any particular proposition supposits determinately, just as the subject of an indefinite proposition does.

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[6] Understand that we are confining ourselves to personal supposition throughout this chapter. Also, just to simplify things, let's agree to confine ourselves to cases where the predicates are common names. If the predicate is a discrete term, it will of course have discrete supposition.

[7] Sometimes you will see this shortened to simply 'distributive supposition'.

[8] The Latin here is *'suppositio confusa tantum'*. Literally, *'tantum'* is 'only', not 'merely'. But the translation "merely confused" is universally used in the literature.

[9] See Ch. 2, p. 14, above.

[10] Albert of Saxony, *Perutilis logica,* Tract. 2, ca. 6–7, fols. 12^{vb}–14^{ra}. See also the presentation in Boehner, *Medieval Logic,* Appendix II, pp. 103–109.

4. Every common term that immediately follows a universal affirmative quantifier without a negation put in front of it supposits confusedly and distributively.

5. A negation confuses confusedly and distributively a common term that follows it mediately or immediately. Therefore, the predicate of any negative proposition, no matter what its quantity is, whether it is common,[11] singular or particular, supposits confusedly [and] distributively — unless the predicate there is a singular term or some other syncategorema blocks it.[12]

6. A term is confused distributively by a negation that infinitizes it.[13]

7. A relative of diversity[14] confuses distributively a term following it.

8. A term that includes a negation in itself[15] confuses confusedly and distributively a term that follows it.

9. Syncategoremata whereby a comparison of equality occurs[16] … confuse terms that follow [them] confusedly [and] distributively — always understanding "unless another syncategorema blocks [it]."

10. Syncategoremata whereby a comparison by excess[17] occurs … confuse terms that follow them … confusedly and distributively.

11. Whatever mobilizes immobility immobilizes mobility.[18]

For merely confused supposition, we have the rules:

1. For any universal affirmative proposition the predicate of which is a common term, the predicate supposits merely confusedly.

2. The subject of any exclusive affirmative proposition[19] supposits merely confusedly.

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[11] I conjecture this should read 'universal', but I am translating what I see, fol. 12^{vb}.

[12] For example, in 'Socrates is not every man', the quantifier 'every' prevents 'man' from having confused and distributive supposition.

[13] That is, by a negation that operates on the term, not on the whole proposition. For example, the 'non-' in 'Socrates is a non-stone'.

[14] The example given is 'other than' (*aliud ab'*) in 'An ass is other than a man'.

[15] For instance, 'different'.

[16] For instance, 'as … as' (*'ita … sicut'*).

[17] For instance, 'than' (*'quam'*).

[18] This concerns mobile and immobile supposition, and I said we weren't going to talk about that.

3. A [syncategorematic] term that is equivalent to an expression put together out of a universal affirmative quantifier and a common term[20] confuses an expressed common term following it in the proposition merely confusedly.

4. There are certain verbs that have the power of confusing the terms following them merely confusedly.[21]

Obviously one could go on indefinitely to ever deeper and more extensive analyses. But what good is it? Surely this complicated schema of classification is not just for the fun of it. There must be some reason for grouping certain kinds of contexts together as producing, for instance, merely confused supposition, and others as producing confused and distributive supposition. Presumably the reason for such grouping is that terms in contexts belonging to the same group behave similarly in logically relevant ways. What are those ways?

Well, the logically relevant ways are given by the rules of "descent and ascent" I mentioned earlier.[22] Those rules will be what define these various kinds of supposition. So let us turn to them.

2. Descent and Ascent

a. Determinate Supposition

We begin with determinate supposition. Ockham tells us (*Summa of Logic* I.70, §§ 4–5) that in determinate supposition it is possible to "descend to singulars" by means of a disjunction. Burley agrees (*Purity,* § 82), although he doesn't actually use the phrase 'descend to singulars'.

How does this work? Consider the singular affirmative proposition 'Socrates is a man'. (Here I am underlining the word we are going "descend under.") From that proposition, we can infer:

> Therefore, Socrates is this man *or* Socrates is that man, *or* Socrates is that other man — and so on for all men.

Similarly for the subjects of indefinite and particular propositions, affirmative or negative:

> A man is running (*alternatively,* some man is running); ∴ This man is running *or* that man is running, *or* …

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[19] For instance, 'Only an animal is a man'.

[20] For example, 'always', which is equivalent to 'at every time'.

[21] For example, 'promise' in 'I promise you a dime (*denarium*)'.

[22] See p. 279 above.

> A man is not running (*alternatively,* some man is not running). ∴ This man is not running *or* that man is not running, *or* …

Again, the predicates of indefinite or particular affirmatives:

> A man is a runner (*alternatively,* some man is a runner).[23] ∴ A man (*respectively,* some man) is this runner, *or* a man (*respectively,* some man) is that runner, *or* …

In each case, we can infer from the original proposition a disjunction of propositions each of which is exactly like the original except that the common term under which we are "descending," together with its quantifier (if any), is replaced by a discrete term that supposits for one of the supposita of the original common term.[24] The disjuncts in such a disjunction are called the "singulars" of the original proposition.[25] Determinate supposition then occurs when this kind of inference — called a "descent to singulars by a disjunction" — is valid.[26]

Is that all there is to it? For Burley (*Purity,* § 82), apparently so. But for Ockham there is more to say. In addition to this "descent"-requirement, Ockham (*Summa of Logic* I.70, § 5) also gives what we might call an "ascent"-requirement. Not only must it be valid to descend from the original proposition to a disjunction of all its singulars. It must also be valid to infer the original proposition from any one of those singulars individually — that is, from any of the disjuncts. Thus:

> Socrates is this man.[27] ∴ Socrates is a man.
>
> This man is running. ∴ A man is running (*alternatively,* some man) is running.
>
> This man is not running. ∴ A man (*alternatively,* some man) is not running.
>
> A man (*alternatively,* some man) is this runner. ∴ A man (*alternatively,* this man) is a runner.

---

[23] I have changed from 'running' to 'runner' since I want to be able to put demonstrative pronouns on the word without adding anything else. Otherwise, I'd have to say something like 'this running [person]'.

[24] See Spade, "The Logic of the Categorical," pp. 191–192, for a discussion of complications that arise over the universal negative quantifier 'no' and over descending under vacuous terms like 'chimera' or 'unicorn'.

[25] Do not be confused. This is not quite the same as the notion of a "singular proposition" described in Ch. 2, p. 14, above. That was just any old categorical proposition with a discrete term in subject position. Here, in the notion of a "singular *of* a proposition," the discrete term may occur in other positions as well.

[26] Note that these descents conform to Albert of Saxony's rules, pp. 279–281, above, except that Albert's rules say nothing at all about the predicates of singular, indefinite or particular affirmatives.

[27] Here I am underlining the term we are going to ascend from.

Buridan's account (Text **(55)**) agrees with Ockham's.

b. Confused and Distributive Supposition

Let us look now at confused and distributive supposition. Burley's account here (*Purity,* §§ 99–137) is obscured by the fact that, although he discusses in considerable detail the subdivision of confused and distributive supposition into mobile and immobile, and again into absolute and respective, and so on, he never gets around to telling us what confused and distributive supposition itself is. But it appears that for the kinds of propositions we are considering, confused and distributive supposition occurs whenever it is possible to descend from the original proposition to any arbitrary singular.[28]

Ockham (*Summa of Logic* I.70, § 8) gives the following criterion: a common term is in confused and distributive supposition when one can descend to a *conjunction* of all the singulars, but cannot ascend from any one singular.

Note for future reference how he puts the "ascent"-rule: not in terms of what you *can* do, but in terms of what you *cannot* do. For example, from 'Every man is running', we can infer 'This man is running *and* that man is running *and* …' But we obviously cannot infer: 'This man is running; therefore, every man is running'.[29]

Buridan (Text **(56)**) in effect agrees with Ockham. He does not explicitly require that ascent from any arbitrary singular fail. But he does say[30] "Now in every [kind of] confused supposition one of these conditions [for determinate supposition[31]] is lacking." In confused and distributive supposition it cannot be the requirement of descent to a disjunction of all the singulars that is lacking, since Buridan says descent to a conjunction of all the singulars holds for confused and distributive supposition, from which it follows that descent to a disjunction of all the singulars holds there as well. Thus it must be ascent from an arbitrary singular (the other requirement Buridan gives for determinate supposition) that fails for confused and distributive supposition.

Albert of Saxony's fourth and fifth rules provide that the subjects of universal propositions, affirmative or negative, have confused and distributive supposition, as do the predicates of any negative categorical whatever (as long as that predicate is a common term). I just gave you an example for the subject of a universal affirmative. Here are examples for the other cases:

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[28] See the discussion in Spade, "The Logic of the Categorical," p. 215, n. 29.

[29] Don't say "Well, yes we could, if this man happened to be the only man in existence." The kinds of inferences involved in descent and ascent were regarded as necessary ones; their validity or invalidity does not depend on which contingencies happen to be realized and which do not. See Spade, "The Logic of the Categorical," p. 192. See also p. 303 below.

[30] John Buridan, *Tractatus de suppositionibus,* Reina ed., p. 323.361–362; King trans., p. 130 § 3.5.7.

[31] See Text **(55)**.

(SUBJECTS OF UNIVERSAL NEGATIVES:) No man is running. ∴ This man is not running *and* that man is not running, *and* … BUT NOT: This man is not running. ∴ No man is running.

(PREDICATES OF UNIVERSAL NEGATIVES:) No man is a runner. ∴ No man is this runner *and* no man is that runner, *and …* BUT NOT: No man is this runner.[32] ∴ No man is a runner.

(PREDICATES OF PARTICULAR NEGATIVES:) Some man is not a Greek. ∴ Some man is not this Greek, *and* some man is not that Greek, *and* … BUT NOT: Some man is not this Greek. ∴ Some man is not a Greek.

With respect to the failure of ascent for predicates of particular negatives, consider: If Socrates and Plato were the only human beings, then it would be true to say that some man (namely, Socrates) is not this Greek (pointing to Plato). But it would be false to say that some man is not a Greek at all, since by hypothesis Socrates and Plato are the only two human beings there are and they are both Greek. We shall have occasion to return to the predicates of particular negatives later on, and will look at this example in more detail then.[33]

Finally:

(PREDICATES OF SINGULAR NEGATIVES:) Socrates is not a runner. ∴ Socrates is not this runner, *and* Socrates is not that runner, *and* … BUT NOT: Socrates is not this runner.[34] ∴ Socrates is not a runner.

Let us summarize what we have so far by putting it in a table of subject and predicates for the various categorical forms:

[32] Pointing, let's say, to a race horse.

[33] See p. 292 below.

[34] Again, let us say, pointing to a race horse.

	Subject	Predicate
A-Form	Confused & distributive	**?**
E-Form	Confused & distributive	Confused & distributive
I-Form	Determinate	Determinate
O-Form	Determinate	Confused & distributive
Indefinite affirmative	Determinate	Determinate
Indefinite negative	Determinate	Confused & distributive
Singular affirmative	Discrete	Determinate
Singular negative	Discrete	Confused & distributive

Figure 19: Personal Supposition in Categorical Propositions

Obviously, there is a conspicuous gap in the table: What about the predicates of universal affirmatives (A-Forms)? For example, what about 'animal' in 'Every man is an animal'?

Well, plainly you cannot infer "Every man is an animal; therefore, every man is this animal, *or* every man is that animal, *or …*"[35] So 'animal' cannot be in determinate supposition.

Still less can you infer "Every man is an animal; therefore, every man is this animal, *and* every man is that animal, *and …*" So 'animal' is not in confused and distributive supposition either.

The descent fails in either case. On the other hand, you can validly ascend from any singular. For suppose it were true that the human race were reduced to a single individual, so that indeed every man is this animal (pointing to the sole surviving person). Nevertheless, it would still be true that every man is an animal.

This peculiar case of the predicate of universal affirmatives shows the need for a yet third kind of common personal supposition. This is what is called "merely confused" supposition.

c. Merely Confused Supposition

Ockham and Burley give slightly different accounts of how this third kind of common personal supposition works. Burley (*Purity,* § 86) says three things are necessary for merely confused supposition:

(a) The term must supposit for several things. In effect, all this means is that is it not a discrete term.

[35] Not even if there happens to be only one animal in existence, and it turns out to be a human being. See n. 29 above.

(b) Ascent must be possible from any singular.

(c) No descent can be made, either by a conjunction or by a disjunction.

In other words, for Burley you have merely confused supposition when you can make no descent at all, but you can ascend. Note that he clearly does have an ascent-rule here; he did not have one for determinate supposition, as you recall.

Ockham (*Summa of Logic* I.70, § 7) gives in effect the same three requirements, but adds a fourth:

(d) One can validly descend to a "disjoint predicate."

Buridan (Text **(57)**) defines merely confused supposition simply by the failure of descent to an arbitrary singular and of descent to a disjunction of all the singulars. But he does mention that descent to a "disjoint extreme" is allowed.

Thus, while you cannot validly infer "Every man is an animal; therefore, every man is this animal, *or* every man is that animal, *or* …," and you cannot validly infer "Every man is an animal; therefore, every man is this animal, *and* every man is that animal, *and* …," you *can* validly infer "Every man is an animal; therefore, every man is *this animal or that animal or that other animal or* …" and so on for all the animals.

In this case what we are descending to is not a complex proposition with several categorical disjuncts, but rather a single categorical proposition with a "disjoint predicate."

Now this is very odd, isn't it? What are we supposed to make of a "disjoint predicate"? What are the truth conditions for propositions with complex terms in them like that? The logic of disjunctive and conjunctive propositions is fairly clear, but it is not at all clear how we are to treat disjoint terms.

I think this appeal to disjoint terms is something of a mark of desperation. I suspect it was done only because people felt a need to be able to make some kind of descent in every case. And since with merely confused supposition descent by means of the familiar conjunctive or disjunctive propositions was not possible, another kind of descent was contrived to fill the gap.

It is important that this move be recognized for what it is: a move one adopts because one is pressured into it, not because it is an attractive one on the face of it. I think it is only if we view it in this way that we can make sense of what happened historically with the theory of modes of personal supposition. We will return to this point later on.

i. Horse-Promising

Before we go on, let me add that Ockham used the notion of merely confused supposition in cases besides the predicates of universal affirmative categoricals. For example (*Summa of Logic* I.72, §§ 4, 22–26), in the traditional soph-

ism or puzzle proposition 'I promise you a horse' Ockham thinks the term 'horse' has merely confused supposition. For although I promise you a horse, I don't promise you this horse in particular, and I don't promise you that horse in particular either, and so on. Hence we cannot validly descend from the original proposition under the term 'horse' to either a conjunction or a disjunction of singulars. But if I did promise you this particular horse, say, it would validly follow that I promise you a horse. Finally, although I cannot descend to a conjunction or a disjunction of singulars, I can descend to a "disjoint term": "I promise you a horse; therefore, I promise you this horse *or* that horse *or …,*" and so on for all the horses there are. Thus the term is in merely confused supposition.

Horse-promising turns out to have been a hot topic of debate in mediaeval logic. John Trentman motivates the question nicely[36]:

> Suppose someone says: "I promise you a horse". When no horses are forthcoming, you investigate and are met with the reply: "It's true I promised you a horse, but the only horses I have are Blackie, Goldie, and Old Dobbin. But surely I did not promise you Blackie; nor did I promise you Goldie, nor Dobbin. And certainly you would not have the gall to claim more than one of those horses. So while it's true that I promised you a horse, I do not owe you any of these horses, and these are all the horses I have." Something seems to have gone wrong with the reference of "a horse" to prevent you from getting your dues in this matter. Blackie, Goldie and Old Dobbin are all horses so they should be included in the extension of "horse"; yet "horse" in this context does not seem to admit a reference to any particular horse.

Then, no doubt for the sake of the pure scholarship of the matter, Trentman adds the delightful footnote[37]:

> Lest anyone think this is a typical medieval sophism with no application in the real world, I think it is worthwhile to note that a similar problem arose only a few years ago in the town of Etobicoke, Ontario, Canada. It seems that in a flush of patriotism during the second world war the town fathers promised a lot to each man honourably discharged from His Majesty's armed services. One man, unfortunately, waited twenty five years or so to claim his lot, and, owing to the fact that by this time the only lots owned by the town were very expensive real estate indeed, he met responses not unlike those in our story.

Because of these difficulties, some authors took the line that 'horse' in 'I promise you a horse' doesn't have personal supposition at all, but rather simple

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[36] See Trentman's "Introduction" to his edition of Vincent Ferrer, *Tractatus de suppositionibus,* p. 41.

[37] *Ibid.,* n. 1.

supposition.[38] That view, however, is not without problems of its own. For if you had promised me a horse, I would not feel you had kept your promise if you gave me only the simple suppositum of the term 'horse' without giving me any individual horse. And that would be so whether, with Ockham, we think of simple supposition as a case of supposition for a concept or whether, with Burley and the realists, we think of simple supposition, at least for common terms, as supposition for a universal or common nature.

Burley himself raises this objection. "For," he says (*Purity,* § 51), "neither a concept in the soul nor a common thing is promised to you." But he apparently thinks he has answered the objection by observing (*Purity,* § 59):

> … because a universal cannot exist by itself, and consequently cannot be delivered [in fulfillment of the promise] except [as found] in some singular, therefore he who promises you a horse is bound to deliver to you some horse. Otherwise he cannot deliver you what was promised.

I am not convinced. Burley's argument shows that you cannot fulfill your promise without giving me some individual horse or other. But it still seems that, on Burley's view, it is your giving me horsehood[39] that constitutes the fulfillment of your promise; the individual horse is just a necessary accompaniment. If, by some ontological miracle, you were able to give me the universal nature without giving me any individual horse, I would marvel at your powers but I still would not think you had paid off your debt.

d. Conjoint Terms

Now you may think there is something oddly asymmetrical about the situation as it has developed so far. After all, we have descent to conjunctive propositions and to disjunctive propositions, and also descent to propositions with disjoint terms. But what about descent to propositions with *conjoint* terms? Doesn't our sense of order require some fourth kind of common personal supposition — to balance things out? Yet, in the table in Figure 18[40] all the places are now filled in, all the subjects and predicates.

Well, it is true. If we confine ourselves to only the subjects and predicates of standard categorical propositions, we need go no further. But if we allow not only whole subjects and predicates to have supposition, but also the categorematic parts of subjects and predicates, then things get very interesting indeed. And, as I

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[38] See, for example, Burley, *Purity,* §§ 51, 59. But note that in §§ 60–61, Burley also seems to allow Ockham's response.

[39] Don't say 'horseness'. In standard, uncorrupted English, the suffix '-ness' is used to form abstract nouns out of adjectives, but never out of nouns. It is only philosophers — and at that only English speaking ones who haven't thought very hard about the facts of their own language — who think they can form abstract nouns by just sticking '-ness' promiscuously onto nouns and adjectives alike.

[40] See p. 285 above.

observed earlier,[41] although many authors seemed to think there was something slightly illegitimate about allowing the parts of subjects and predicate to have supposition in their own right, they regularly ignored their scruples in practice.[42]

If we allow the parts of subjects and predicates — and indeed any categorematic term occurring in a proposition — to have supposition, then we can contrive cases where we cannot descend either to a conjunctive proposition or to a disjunctive proposition, or even to a disjoint term, but where we *can* descend to a "conjoint term." For example, Peter Tartaret, who was Rector of the University of Paris at the very end of the fifteenth century, gives the curious example 'No head does every man have' (Text **(81)**).[43]

The idea here is that we don't all share a common head, as the Norns of the old sagas were said to have shared a single eye among the three of them, so that they had to pass it around. No, each of us has his or her own head.[44] In that sense, then, it is true: no head does every man have. But we cannot infer from that: "therefore, no head does this man have *or* no head does that man have *or,* …," since we all have heads. Still less can we infer: "therefore, no head does this man have *and* no head does that man have *and,* …," for the same reason. And in this case, we cannot even infer: "therefore, no head does this man *or* that man *or* that man … have," since, once again, we all have heads.

But we *can* infer: "no head does this man *and* that man *and* that man … have." And in fact that "descent" seems to capture exactly the sense of the original proposition: we do not all share a common head; each of has his or her own.

Again, ascent is possible in this case from any singular. If, alas, no head does *this* man have, then *a fortiori* no head does every man have.

So apparently we need yet a fourth kind of common personal supposition, one in which ascent from an arbitrary singular is valid, descent is *not* valid to a disjunctive or conjunctive proposition, or to a disjoint term, but *is* valid to a conjoint term.

While we're at it, I should remark that conjoint terms were also sometimes used in cases of plural terms taken collectively. For example, 'The Apostles are twelve'. One cannot infer: "therefore, Peter is twelve *or* James is twelve *or* …," or "therefore, Peter is twelve *and* James it twelve *and* …," or even "therefore, Peter *or* James *or …* is twelve." But one *can* infer: "therefore, Peter *and* James *and …* are twelve."

But mediaeval logic had no fully developed theory of the plural, and although a few authors gave examples like the one I just did, nothing more was done about them.

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[41] See Ch. 8, p. 252, above.

[42] As we have just seen in 'I promise you a horse'. There 'horse' is only part of the whole predicate, which is 'promise you a horse'.

[43] Note that Tartaret includes this kind of supposition under merely confused supposition. It would indeed go there under Burley's definition, but not under Ockham's.

[44] For the sake of the example, ignore decapitations.

By this point, a question has surely suggested itself to you: Just where does this stop? Are there other, even stranger kinds of descents that may be required if we just use a little ingenuity? We'll come back to this later on.

e. Modes of Personal Supposition as a Theory of Analysis or Truth Conditions

But before we do that, let us pause to try to figure out what is going on in this theory. We have seen enough by now to begin to get the flavor. And I suppose our initial impulse is to take it that what we have here is a mediaeval theory of generality — a theory of quantification. In fact, Michael Loux treats the theory this way in a paper called, significantly, "Ockham on Generality." He is by no means the only one to have done so.

On this view, the expanded propositions one generates by descent are meant to give a kind of "analysis" of the original proposition, in much the same way as, for example, when we teach elementary logic we sometimes treat universally quantified propositions heuristically as "infinite conjunctions," and existentially quantified ones as "infinite disjunctions."

Ultimately, on this view, the analysis reduces propositions that contain common terms, whether explicitly quantified or not, to conjunctions and disjunctions of affirmative or negative identity statements. And for this reason, the theory is sometimes thought to be connected with the so called "identity"-theory of the copula, as we find it, for instance, in Abelard.[45]

How would this go? Well, consider the traditional proposition

(1) Every man is an animal.

The subject term there is in confused and distributive supposition, so that we can descend (using *'m'* with a subscript for individual men) to:

(2) m_1 is an animal & m_2 is an animal & …

Now while the term 'animal' in the original proposition was in merely confused supposition, the same term in each of these conjuncts is in determinate supposition, since there it is the predicate of a singular affirmative. Hence, from each of these conjuncts we can in turn descend to a disjunction of propositions. Take, say, the conjunct 'm_1 is an animal'. We can descend under 'animal' (using *'a'* with a subscript for individual animals) to:

(3) m_1 is a_1 or m_1 is a_2 or …

Here the 'is', since it links two singular terms, amounts to the "is of identity," so that **(3)** amounts to:

[45] On early theories of the copula, see De Rijk's "Introduction" to Peter Abelard, *Dialectica,* pp. xli–xliv, and De Rijk, *Logica Modernorum,* vol. II.1, pp. 105–108, 183–186, 203–206.

(4) $m_1 = a_1$ or $m_1 = a_2$ or …

Proposition **(1)**, therefore ultimately reduces to a conjunction of disjunctions of affirmative identity statements, in which each term is a singular term and so has discrete supposition. That is, **(1)** implies:

(5) ($m_1 = a_1$ or $m_1 = a_2$ or …) and ($m_2 = a_1$ or $m_2 = a_2$ or …) and …

Similarly, if you work it all out, universal negative propositions reduce to conjunctions of conjunctions of negative identity statements. Particular and indefinite affirmatives reduce to disjunctions of disjunctions of affirmative identity statements. And particular and indefinite negatives reduce to disjunctions of conjunctions of negative identity statements. Singular affirmatives reduce to simple disjunctions of affirmative identity statements. And finally, singular negatives reduce to simple conjunctions of negative identity statements.

On the view we are considering here, the fully expanded propositions you descend to like this are meant to be analyses of the propositions you started with. Now note that such full expansions will be available, they are consequences of the machinery of the theory, no matter what we think the theory as a whole was trying to accomplish. What the present view does, then, is simply to take advantage of the obvious fact that these expansions certainly look like good analyses, and to suppose that this was the intention of the theory all along. A simple and attractive approach.

We may express the same view slightly differently by saying that the theory of modes of common personal supposition in effect provides a theory of *truth conditions* for propositions with common terms in them in personal supposition, truth conditions that are expressed ultimately in terms of the truth values of singular identity statements (affirmative or negative).

i. Objections to This Interpretation.

Now I said our "initial impulse" is perhaps to agree with this plausible interpretation. But if so, the theory is in trouble — because it won't work. Here I have three main lines of argument.

First, no mediaeval author I know of every actually says this is what the theory is trying to do. In fact, no mediaeval author I know of ever says what the theory is trying to do at all!

Second, some authors, as we have already seen,[46] do have an explicit theory of truth conditions for quantified propositions, and it doesn't look anything at all like the theory of descent and ascent we have just seen. If the latter is supposed to be a theory of truth-conditions too, why do we have two such theories in these authors? And why does no mediaeval author comment on this striking situation?

[46] See Ch. 8, pp.270–271, above.

Related to this, some later authors reject earlier theories of truth based on supposition. But when they do so, they always talk about the explicit theories we have already discussed, not the theory of descent and ascent.[47]

But third and most important, if the theory of descent and ascent is meant to be a theory of analysis or of truth conditions, it simply won't work. It just doesn't give the right results!

The problem I have in mind here was first pointed out by John Swiniarski in 1970,[48] and was pointed out again by Gareth Matthews in 1973.[49] The problem is this: According to all our authors, the predicates of particular negatives (**O**-forms), like the predicates of all negative categoricals,[50] stand in confused and distributive supposition (provided only that the predicates are common terms). And in fact, if you test it, this is quite correct according to the descent and ascent rules our authors provide.

Consider therefore the particular negative categorical 'Some man is not a Greek'.[51] The predicate term, 'Greek', has confused and distributive supposition there, so that we can descend to: 'Some man is not this Greek and some man is not that Greek, and …' But note that this expanded conjunction in no sense gives an analysis of the original. It does not give us its truth conditions. It is not necessarily even equivalent to it. The expanded conjunction can be true when the original proposition is false — as would happen, for example, if Socrates and Plato turned out to be the only human beings. For the original proposition 'Some man is not a Greek' would be false in that case, but the expanded conjunction would be true: 'Some man [namely Plato] is not *this* Greek [pointing to Socrates] and some man [namely Socrates] is not *this* Greek [pointing to Plato]'.[52]

What has happened here is that confused and distributive supposition has been defined in such a way that the conjunction to which you descend is not equivalent to the original proposition. Look, for example, at Ockham's definition once more (*Summa of Logic* I.70, § 8). You descend to a conjunctive proposition. But when it comes to ascent, Ockham doesn't say that you can ascend from that same conjunction, as you would have to be able to do if the descent gave you an equivalent proposition. He says instead only that you *cannot* ascend from any one conjunct by itself. And that is not at all the same thing. In short, the theory of descent and ascent cannot be a theory of analysis or truth conditions, since the theory does not always give sufficient conditions and necessary conditions that match.[53]

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[47] For example, see Peter of Ailly, *Concepts and Insolubles,* pp. 45–46, §§ 144–147.

[48] Swiniarski, "A New Presentation of Ockham's Theory of Supposition."

[49] Matthews, "*Suppositio* and Quantification in Ockham."

[50] Compare Albert of Saxony's Rule 5, p. 280, above.

[51] I said (p. 284 above) I would return to this.

[52] Compare p. 284 above.

[53] In Spade, "Priority of Analysis and the Predicates of O-Form Sentences," p. 268, I conjecture that the same lack of equivalence will arise whenever a term that would otherwise be in merely confused supposition is inserted within the scope of a negation. Consider, for instance, 'I do *not* promise you a horse'.

ii. Suggested Answers to These Objections

Swiniarski and Matthews draw quite different morals from this curious situation.[54] Swiniarski concludes that there is something seriously wrong with the theory, whereas Matthews concludes that there is something seriously wrong with *our view* of what the theory was. Although I have disagreed with Matthews in print over this point,[55] I have subsequently changed my mind. I no longer think that what we have in the theory of modes of personal supposition is an attempt to give analysis or truth conditions at all.[56]

What else might the theory have been trying to do then? One other possibility I have suggested goes like this[57]: The various kinds of common personal supposition are defined by descent and ascent rules in the way we have seen. Then certain additional rules are formulated for checking various kind of inferences by means of the supposition of the terms in the premises and the conclusion. For example, to take a disgusting example Burley discusses (*Purity,* §§ 93–98), in the proposition 'Twice you ate a loaf of bread' the term 'loaf of bread' has merely confused supposition, whereas in 'A loaf of bread you ate twice' it has determinate supposition. (You can verify these claims for yourself by checking the descent and ascent rules.) Now Burley gives us the rule (*Purity,* § 94): "… whenever there is an argument from a term suppositing merely confusedly to a term suppositing determinately with respect to the same multitude, there is a fallacy of figure of speech." Hence, we cannot validly infer: "You ate a loaf of bread yesterday, and you ate a loaf of bread today; therefore, twice you ate a loaf of bread; therefore, a loaf of bread you ate twice." The last step fails because of the rule just quoted.[58]

Of course in this particular case we would probably not be tempted to draw the inference in the first place. But there are other inferences where the fallacy is not so obvious. Consider: "Than every integer there is some greater integer; therefore, there is some integer greater than every integer." Greater minds than yours or mine, gentle reader, have been fooled by inferences like that!

Thus the theory of modes of personal supposition, together with the rules linking those modes to the theory of inference, provides a way of checking inferences for fallacy even in non-obvious cases.

It is certainly true that the theory of modes of personal supposition was used in this way; indeed, I have just given you an example from Burley. But that

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[54] No modern interpreter I know of has suggested an answer to my first two objections.

[55] See Spade, "Priority of Analysis and the Predicates of O-Form Sentences."

[56] Nevertheless, some later authors — for instance, Albert of Saxony, Ralph Strode, and Paul of Venice (or whoever wrote the *Logica magna*) — do explicitly require ascent from a conjunctive proposition for confused and distributive supposition. For them, descent and ascent do yield equivalences, so that the theory by that time may well have been intended to provide an analysis or a specification of truth conditions. See Spade, "The Logic of the Categorical," p. 220 n. 78, and the texts quoted *ibid.,* pp. 223–224. I do not know when this development first occurred.

[57] See Spade, "The Semantics of Terms," p. 195.

[58] It is perhaps best not to think too hard about this example right before lunch. See also Ch. 8, n. 34 (p. 252), above.

can hardly be the whole story, and I doubt very much if it was the main purpose of the theory all along. For first of all, the "linking"-rules that connect the theory of modes with the theory of inference were never very fully developed, and were certainly never developed systematically. If this is what the theory was trying to do, it never got beyond the germinal stage. Besides, it fails to explain certain peculiar facts about the rules of descent and ascent.

For example,[59] why are confused and distributive supposition and merely confused supposition grouped together as "confused"? What do they have in common? Ascent from an arbitrary singular fails for confused and distributive supposition, but holds for merely confused supposition. Descent to a conjunctive proposition and for that matter to a disjunctive proposition both hold for confused and distributive supposition, but both fail for merely confused supposition. It is true that descent to a disjoint term holds for confused and distributive supposition[60] as much as it does for merely confused supposition, but no mediaeval author ever makes the point.

In terms of descent and ascent, merely confused supposition would seem to have more in common with determinate supposition than with confused and distributive supposition; for the first two, both ascent from an arbitrary singular and descent to a disjoint term hold.[61] Yet merely confused supposition is terminologically grouped with confused and distributive supposition, not with determinate supposition. Why?

I have another proposal about what the theory of modes of personal supposition was trying to do. There is some historical evidence for the proposal, although it is far from decisive. And I emphasize that I do not want to push this proposal very hard; I am not at all convinced by it. Nevertheless, I present it to you for your consideration.[62]

Earlier,[63] I remarked that the first part of supposition theory, the theory of supposition proper, answered the question what a term supposits for on a given occasion. The second part of the theory, I said, did not affect the answer to that question at all. By saying that a term is in, for example, personal supposition — and by taking into account certain considerations of tense and modality that we will consider in Ch. 10 below — we have fixed the supposita of that occurrence of the term once and for all. The further subdivision of personal supposition into its various modes does not pertain to the question what a term supposits for, but presumably to some other question, the nature of which is still a mystery.

I also said that this is true at least for the fourteenth century. It is implicit, for example, in Ockham. For first, his definitions of material, simple and personal supposition make no sense, or at least none that I can find, unless a term in personal supposition is taken to supposit for *all* its significates. That was the import

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[59] See Spade, "The Logic of the Categorical," p. 204.

[60] Thus "Every man is an animal; therefore, this man or that man or … is an animal."

[61] "Some man is running; therefore, this man or that man or … is running" is just as valid as is "Some man is running; therefore, this man is running or that man is running or …"

[62] For a full discussion, together with a more complete assessment of the evidence, see Spade, "The Logic of the Categorical," pp. 208–212.

[63] See Ch. 8, p. 244, above.

of Ockham's phrase 'taken significatively'.[64] Second, the explicit account of truth conditions Ockham gives in *Summa logicae* II (Texts **(43)–(45)**), an account quite distinct from the theory of descent and ascent, seems to presuppose that a personally suppositing term supposits for all its significates. Third, even in the theory of descent, the singulars to which one descends involve discrete terms suppositing, one after another, for *each* of the significates of the term descended under. Thus, to say a term is in personal supposition is to say it supposits for *all* its significates — and this is true even before we start dividing and subdividing personal supposition into its various "modes."

Buridan, in fact, states the point explicitly[65]:

> Now "supposition," as it is taken here, is the taking of a term in a proposition for some thing or for some things in such a way that, when that thing or those things are indicated by the pronoun 'this' or 'these', or their equivalents, the term is truly affirmed of the pronoun by means of the copula of the proposition. For example, in the proposition 'A horse runs', the term 'horse' supposits for every horse that exists, because, whichever one is indicated, it would be true to say 'This is a horse'.

There is some implicit funny business here about the tenses of the copula, but we needn't worry about that right now.[66] The point is that in the proposition 'A horse runs', which is an indefinite categorical and so is treated as amounting to 'Some horse runs', the term 'horse' supposits for all horses, not just for some horses — not just, say, for the ones that are running.

Now I think point is pretty much worked out by the time we get to Burley and Ockham. But certainly it was not always that way. Earlier it was not so clear.

I propose for your consideration, therefore, that the theory of modes of common personal supposition originally grew up as part of the attempt to answer the question what a term supposits for. Originally, to say the term 'man' supposits personally was only to say that it supposits for men, rather than for the common nature *man,* or for the concept "man" or for the term 'man' itself. But *how many* men it supposited for remained to be settled, and that was the point addressed by the theory of "modes."

You can find more or less firm suggestions of this in De Rijk's *Logica Modernorum* and elsewhere,[67] but the most explicit text I can find is from Lambert of Auxerre (Text **(25)**):

> Determinate [supposition] is what a common term has when it can be *taken indifferently for one thing or for several,* as when one says 'A man runs'. In this case 'man' has determinate supposition.

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[64] See Ch. 8, p. 254, above.

[65] John Buridan, *Sophismata,* Ch. 3, Scott ed., p. 50; Scott trans., p. 100.

[66] On tense, see Ch. 10, below.

[67] See the references and discussion in Spade, "The Logic of the Categorical," pp. 209–211.

> For it is true when one man runs or several. Now it is called "determinate" because for the truth of a proposition in which there occurs a common term having such supposition, it suffices that the common term *be taken of necessity for some suppositum.* Neither is it required that it be *taken of necessity for several,* although it is *able* to be taken in such supposition for several. Therefore, it is necessary that a common term in such supposition be *taken for one thing determinately.* If [it is *taken*] *for several,* that is accidental.

There are some obscure things in this passage, but note what the question is. It is "Does the term supposit for *one* or for *several*?" That is, the question is a "how many" question. And the answer is: For determinate supposition, it can go either way. Lambert then goes to say (Text **(25)** again):

> Confused [supposition] is what a common term has when of necessity it is *taken for all its supposita or for several.* Now it is called 'confused' from the *multitude of the supposita for which a term having such supposition is taken.* For where there is multitude, there there is confusion. One kind of confused supposition is strong [and] mobile, another is weak [and] immobile. The strong [and] mobile kind is what a common term has when it is *taken of necessity for all its supposita,* and a descent can be made under it … Weak [and] immobile [supposition] is what a common term has when of necessity it is *taken for several supposita contained under it, yet not for all.* Neither can a descent be made under it.

Lambert then goes on to say that the latter kind of supposition is had, for instance, by the predicates of universal affirmatives — that is, by terms that in the more standard terminology have "merely confused" supposition.

Here once again the question is how many things the term supposits for. In what other people called confused and distributive supposition, the term supposits for all its "supposita"[68] — that is, for all its "inferiors" or, on Ockham's theory of signification, for all its significates. In what other people called merely confused supposition, it is taken for several of its inferiors, although not for all of them — *and that is why you cannot descend to all of them.*

The basis of this theory, perhaps, is the old "identity"-theory of the copula,[69] according to which the copula indicates some kind of literal identity between the semantic correlate of the subject term and the semantic correlate of the predicate term. Thus, in the true proposition 'Every man is an animal', if the subject term supposits for every man, the predicate term there must supposit for exactly the same things. That is to say, the predicate there does not supposit for every animal, but only for some of them: the ones that are men. That is why you cannot descend to all the singulars under the predicate. You are not talking there

[68] On what this term means in such contexts, see Ch. 8, p. 246, above

[69] See n. 15, p. 290, above.

about all the individual men, either conjunctively or disjunctively; you are talking about only some of them. Hence the failure of descent in cases of merely confused supposition.

Incidentally, if this kind of theory is indeed at the origin of the doctrine of modes of personal supposition, it goes a long way toward explaining the otherwise mysterious fact that confused and distributive supposition is grouped with merely confused supposition, even though they have less in common than do determinate supposition and merely confused supposition.[70] In both kinds of "confused" supposition, merely confused as well as confused and distributive, a term has to supposit for *several* of its inferiors — that is, for more than one. In merely confused supposition it supposits for several but not for all (so that a descent to all the singulars is not possible), whereas in confused and distributive supposition it does supposit for all of them (so that a descent to all the singulars is possible after all). In determinate supposition, by contrast, the term does not have to supposit for several of its inferiors (although it can); one will suffice.

Perhaps in fact the "identity"-theory of the copula, and the question what a term supposits for, really are at the origins of the theory of modes of personal supposition. But whether they are or not, such an approach is utterly confused. Look for instance at what Lambert says about determinate supposition (Text **(25)**). He there seems to be mixing two quite different considerations: **(a)** the question of "aboutness" — what you are talking about — so that when you say 'Some man is running', you may be talking about some one man or some more than one (it could go either way); and **(b)** the question of truth conditions, so that the truth of any one singular is sufficient for the truth of the original proposition, and hence all the singulars get into the act insofar as any one of them all will do. Lambert does not seem to separate these two issues.

But things are worse than that. What about false propositions? What does the term 'ass' supposit for in 'Every man is an ass', which is false? As the predicate of a universal affirmative, as well as according to the rules of descent and ascent, the term has merely confused supposition there. So, on the approach we are now considering, it supposits for several but not all men. Which ones then? The asses that are men? There aren't any of those. Does it then supposit for zero asses? In that case, it would not be in merely confused supposition after all, would it? To be in merely confused supposition, it would have to supposit for several asses (although not for all).

What may have happened, then, in the history of supposition theory is something like this. The two parts of the theory distinguished by Scott,[71] which were quite distinct by the fourteenth century, were perhaps originally not all that disconnected from one another. They both began as attempts to answer the question "What are you talking about" — that is, what does a given term supposit for? The theory of supposition proper answered the question "What *kind* of thing are you talking about?" And then, if the answer to that question was that you are talking about the "inferiors" of the term (that the term is in personal supposition),

[70] See p. 294 above.

[71] Once again, Scott, "Introduction" to Buridan, *Sophisms on Meaning and Truth,* p. 30.

then the theory of modes of personal supposition went on to ask the question "*How many* of them are you talking about?

As the difficulties and problems with this approach came to be realized and cleaned up,[72] the question what a term supposited for came to be confined to the first part of supposition theory, the theory of supposition proper, together with the theory of ampliation that we have still to discuss.[73] One symptom, perhaps, of the rejection of this approach is the introduction of disjoint terms into the theory of merely confused supposition. This is a move that allows terms in merely confused supposition to supposit for exactly the same things they would supposit for in confused and distributive supposition, the only difference being in the different styles of descent and ascent that are permitted.

But once the question what a term supposits for had been confined to the first half of supposition theory, the theory of modes of personal supposition was left with nothing to do! It was no longer part of a theory of reference; it was not quite suitable for a theory of truth conditions or analysis. And although there was some potential for the theory to be used as a device for checking inferences and detecting fallacies, that potential was never fully realized.

In short, the theory of modes of personal supposition became an idle theory. Although people continued to discuss it at great length and to tinker with the details of it, it was — oddly — a theory without a topic any more. As I have said elsewhere[74]:

> No wonder it has proved so hard for scholars to agree about what [the theory of modes of personal supposition] was trying to accomplish. By the early fourteenth-century it was longer trying to accomplish anything at all!

This is indeed a hard pill to swallow. I do not entirely accept it myself, and I do not expect you or anyone else to do so either, at least not as it stands. I have deliberately presented my "proposal" in what I hope is a provocative form, because I would genuinely like for some bright reader among you to be goaded into coming up with a better account. But be sure it really *is* better, and that it accommodates at least most if not all of the evidence available.

3. The Logical Structures of the Theory

You may think that, having got to that point, there is nothing more to be said, at least not without coming up with an answer to the interpretive challenge I just posed. But no! There is a lot more to be said. For, whatever purposes the theory of modes of personal supposition did or did not serve, whatever questions it

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[72] Certainly by the time of Ockham, although he was by no means the first. Some authors realized the difficulties and avoided talking this way from very early in the history of supposition theory. See Spade, "The Logic of the Categorical," pp. 209–211.

[73] See Ch. 10 below.

[74] Spade, "The Logic of the Categorical," p. 212.

did or did not answer, there is still the question of the actual mechanics of the theory, how the descents and ascents actually worked and how the various kinds of descents and ascents are related to one another. By examining these, we can shed a great deal of light on the theory, and perhaps even make some progress in figuring out what its purpose was.

Let us then step back from the actual history of the theory for a moment, and look at it in a more or less ideally theoretical, abstract state. I recognize the dangers of doing this, but nevertheless, by doing so I think we shall find some very interesting things.

Fair warning: the remainder of this chapter is more technical than you have seen up to now in this book. If you don't understand all the lingo, just ignore it and keep reading. I have tried to keep it to a minimum, and in any case to use it only where you can safely skip over it and still get the main points.[75]

a. Some Preliminary Conclusions

Setting aside for the moment descent to complex (conjoint or disjoint) terms, we have so far encountered **(a)** descent to conjunctions and **(b)** descent to disjunctions of all the singulars, and **(c)** ascent from any one arbitrary singular. We have not talked about the notion of **(d)** descent to any one arbitrary singular, but some early treatises do talk about it — and in fact sometimes it is the only kind of "descent" they mention.[76] Again, although the authors we are primarily concerned with discuss ascent only in terms of ascent from any one arbitrary singular, we can obviously ask about the notion of ascent **(e)** from a conjunction and **(f)** from a disjunction of all the singulars. Some late authors do discuss ascent from a conjunction of all the singulars,[77] but — curiously — I do not know of anyone who ever talked about ascent from a disjunction of all the singulars. Nevertheless, by turning the crank of propositional logic a few times, we can make the following observations:

(1) Since conjunctions imply their conjuncts, therefore whenever descent from the original proposition to a conjunction of all its singulars is valid, descent to any one arbitrary singular will be valid as well.

(2) If ascent to the original proposition from any one arbitrary singular is valid, then (since conjunctions imply their conjuncts) ascent from the conjunction of all the singulars will likewise be valid.

(3) Since disjunctions are implied by any one of their disjuncts, therefore whenever descent from the original proposition to any one arbitrary singular is valid, descent to the disjunction of all the singulars will be valid as well.

(4) If ascent to the original proposition from the disjunction of all the singulars is valid, then (since disjunctions are implied by any one of their disjuncts) ascent from any one arbitrary singular is valid as well.

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[75] The material I am about to present is based on Spade, "The Logic of the Categorical," §§ V–VII, pp. 197–204.

[76] See Spade, "The Logic of the Categorical," p. 209.

[77] See n. 56 above.

(5) If ascent to the original proposition is valid from each of its singulars separately, then it is likewise valid from their disjunction, in virtue of what is called "constructive dilemma" (if $p \rightarrow r$ and $q \rightarrow r$, then $(p \vee q) \rightarrow r$).

(6) Finally, if descent from the original proposition is valid to each of its singulars separately, then descent is likewise valid to their conjunction, in virtue of "conjunction introduction" (if $p \rightarrow q$ and $p \rightarrow r$, then $p \rightarrow (q \,\&\, r)$).

Putting all this together, we can conclude some interesting things. First of all, from **(1)** and **(6),** descent to a conjunction of all the singulars is valid iff descent to any arbitrary singular is valid. Again, from **(4)** and **(5)**, ascent from a disjunction of all the singulars if valid iff ascent from any arbitrary singular is valid.

We can perhaps see therefore, why descent to an arbitrary singular is not mentioned after the early literature, and why ascent from a disjunction of all the singulars is not mentioned at all. They are already implicitly covered by descent to a conjunction of all the singulars and by ascent from an arbitrary singular, respectively.

b. Restrictions on the Propositions We Are Considering

Before we go on, I want to narrow down our focus to consider only certain kinds of propositions. After all, things are more manageable if we don't try to do everything at once. Besides, the theory of modes of personal supposition seems to be most "at home" in the relatively narrow context I am about to describe. In fact, I think the theory was probably designed with these propositional contexts mainly in mind. Its application to other propositional contexts was in effect an extension of the theory, and either worked well or not, depending on the case.

Please understand that the restrictions I am going to impose are restrictions only on the propositions *from* which we descend or *to* which we ascend, not on the propositions *to* which we descend or *from* which we ascend. It will be important to bear this in mind for restrictions **(3)** and **(4)** below. That said, here we go:

(1) First, we exclude all hypothetical propositions.[78]

(2) Next, we exclude all so called "exponible" propositions.[79]

(3) We also exclude propositions with plural terms in them. In short, we are not talking about propositions like 'The Apostles are twelve'.

(4) We temporarily exclude all propositions containing conjoint or disjoint terms.[80]

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[78] On the relevant sense of 'hypothetical' here, see Ch. 4, p. 128, n. 139, above. On the rationale for this restriction, see Spade, "The Logic of the Categorical," pp. 216–217 n. 41.

[79] For "exponible" propositions, see Ch. 4, p. 117, n. 95, above. On the rationale, see Spade, "The Logic of the Categorical," p. 217 n. 42.

(5) We exclude all propositions with "funny" quantifiers like 'many' or 'most'. All the quantifiers in propositions we will be considering will be of the form 'every' or 'some'. The universal negative quantifier 'no' will be treated, in accordance with the laws of equipollence, as 'not some'.

(6) We exclude what are nowadays called "opaque contexts," including not only so called "propositional attitudes" involving such things as "horse-promising,"[81] but also *de dicto* modalities.[82]

c. Facts of Mediaeval Usage

Next, for the record, let's just agree to accept the following facts of mediaeval usage:

(a) Universal affirmatives have existential import.[83]

(b) Medieval authors quantified over *terms.* They did not use "bare variables." They said 'Every man is an animal', not 'For all x, if x is a man then x is an animal'. This doesn't really make the slightest difference for us in the end, but I call it to your attention anyway.

(c) Indefinite propositions were treated as amounting to implicit particulars propositions.[84] That is, an unquantified common term in subject position was regarded as implicitly quantified by a particular (existential) quantifier. So too — although the point was not usually made — for the predicate. Thus 'Some man is Greek' amounts to 'Some man is some Greek', and so on for the other categorical forms. For the sake of regimenting our procedure, we will treat all common names as quantified, implicitly or explicitly.

(d) We shall follow mediaeval logicians' practice rather than their preaching,[85] and allow *all* categorematic terms in a proposition to have supposition, not just the whole subject and the whole predicate.

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[80] This restriction is temporary, because in virtue of the results to be described below, we can ignore it without affecting anything. But we're not yet in a position to see that.

[81] See pp. 286–288 above.

[82] On why we want to exclude the latter, see Spade, "The Logic of the Categorical," p. 218 n. 47.

[83] See Ch. 2, p. 17, above.

[84] See Ch. 2, p. 14, above.

[85] See Ch. 8, p. 252, above.

(e) Lastly, we shall follow the mediaeval convention that logical scope extends to the right, not to the left. It extends to the end of the relevant categorical, and not beyond.

d. A Partial Logic of Complex Terms

So far in our discussion we have encountered both disjoint terms and, in a few exotic cases, even conjoint terms. What are we going to do with them? What is their logical behavior?

I suspect the general answer to that question is not easy or clear. But fortunately, we don't need the general answer. It will be enough to consider disjoint and conjoint terms that are not within the scope of a negation, a quantifier or any other operator. For those cases, I make the following substantive but I hope uncontroversial claim:

> A proposition that contains a conjoint term not within the scope of any operator is equivalent to the conjunction of the corresponding singulars. A proposition that contains a disjoint term not within the scope of any operator is equivalent to the disjunction of the corresponding singulars.

For example, 'Jane and her husband have arrived' is equivalent to 'Jane has arrived *and* her husband has arrived'. Again, 'John or his wife left the keys on the table' is equivalent to 'John left the keys on the table *or* his wife left the keys on the table'.

That much seems all right. In other contexts more generally, this doesn't always hold, of course. Thus (speaking of the key-leaver), 'It was not John or his wife' is decidedly not equivalent to 'It was not John *or* it was not his wife'. But that doesn't matter. We only need to talk about the cases described, where the conjoint or disjoint term is *not* within the scope of an operator.[86]

Because of all the above restrictions and conventions, it follows — or if it doesn't, we'll just add some more restrictions until it does[87] — that whenever it is valid to descend under a common term in a proposition to some given singular of that proposition, it is equally valid to descend to any other given singular as well. So too for ascent: if it is valid to ascend *from* some given singular of a proposition *to* that proposition, then it will be just as valid to ascend from any other singular

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[86] Compare Aristotle, *De interpretatione* 8, $18^{a}19$–23. Aristotle is not using discrete terms there, but the idea is obviously the same.

[87] This move may look as if it undermines the whole significance of what I will be doing in the next section. After all, if you are free to stipulate whatever you want, you can get all sorts of amazing "results" to come out true! But I don't think that general fact is really a problem in this case. I think what I am claiming here was genuinely intended by the people who came up with the theory of modes of personal supposition, and is not a mere artifact of a spurious narrowing of context by me. Or, to put in another way, I think the context in which the theory grew up was one in which the claim I am making here was always satisfied.

of that proposition. In other words, logically speaking, all the singulars of a given proposition are on a par.

e. Important Results

With all these preliminaries in place, let us draw some important conclusions.

i. First Important Result

First of all, I claim, in the contexts we have confined ourselves to, the "native habitat" of the doctrine of modes of personal supposition, it is never possible to have both descent to any arbitrary singular and ascent from any arbitrary singular valid at once.

I do not have anything so rigorous as a formal proof of this claim, but I do have what I think is a good argument for it. If, contrary to my claim, it were ever possible to have both descent from the original proposition to any arbitrary singular and at the same time ascent to it from any arbitrary singular, then from any one singular we could infer the original proposition (by ascent) and from that we could in turn infer any other singular (by descent), so that each singular of the original proposition would be equivalent, in a very strong sense, to each other such singular.

But that doesn't seem to be so. To be sure, everything here rests on just what kind of inference is supposed to be involved in descent and ascent. We have not talked very much in this book about the various theories of inference or "consequence" that were current in the Middle Ages, and I do not plan to do so now.[88] But note this much: Descent and ascent must be *necessary* inferences at least. Even if Socrates happens to be the only surviving human being, we don't want 'Socrates is a Greek; therefore, every man is a Greek' to be a correct ascent. The subject of the consequent is supposed to be in confused and distributive supposition there (since it is the subject of an A-form categorical), and ascent from one singular is supposed to fail for confused and distributive supposition.[89]

But necessary inference (strict implication) is not enough. We need a "tighter" notion yet. 'Every person of the Trinity exists' is a necessary truth (let us say), and so necessarily follows from 'The Father exists'. But 'The Father exists; therefore, every person of the Trinity exists' should not count as a correct ascent, since the subject of the consequent is in confused and distributive supposition, and, as before, ascent from one singular is supposed to fail for confused and distributive supposition.

If therefore, ascent to the original proposition from any arbitrary singular and descent from that proposition to any arbitrary singular ever both held at the same time, all the singulars of the original proposition would be "equivalent" in a

[88] For a survey of such theories, see Boh, "Consequences," and Stump, "Topics."

[89] See n. 29 above.

very strong sense indeed — stronger even than 'The Father exists' and 'The Son exists' are equivalent! Now despite the lingering obscurity in the notion of inference involved in descent and ascent, I am confident that the singulars of a proposition were never taken as equivalent in so strong a sense. And that is all I need for this "First Important Result." Further precision here will have to wait until more research is done.[90]

ii. Second Important Result

Although we never have both ascent to the original proposition from any arbitrary singular and descent from it to any arbitrary singular at the same time, nevertheless we always have the one or the other.

Here we can give something closer to an actual proof.[91] Take any categorical term *t* in any categorical proposition *p* of the kinds we are restricting ourselves to. That term will be (explicitly or implicitly) quantified by either a universal or an existential (particular) quantifier.[92]

Now in virtue of our scope convention,[93] let's translate *p* into a kind of artificial and regimented form by moving all the common names in *p,* along with their quantifiers and negations (if any), out to the front, keeping their original order. In order to do this, we need to use variables. For example, if our original proposition *p* is 'Every guest gave Mary a birthday present' (it's a party, say), we get: 'For every guest *g* there is a birthday present *b* such that *g* gave *b* to Mary'. Again, 'No man is an island' yields: 'It is not the case that there is some man *m* and some island *i* such that $m = i$.[94]

This is not something that fits mediaeval style, of course. But that's all right for now. I am not claiming that *they* did this. I am claiming that *we* can do it without distorting the logic of the situation. I am not saying that anyone in the Middle Ages ever actually derived the result I am aiming at now (certainly no one ever said so); I am claiming only that the result holds, whether anyone realized it or not.

Note two things about this translation. First, I do not claim it is synonymous with the our original proposition *p.* It may well be, but I don't need to say so. All I need is logical equivalence.[95] Second, as you can verify for yourself, the logical moves I am about to make are not at all affected by the fact that the mediaevals quantified over terms, not over bare variables.[96]

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[90] See Spade, "The Logic of the Categorical," Theorem 1, p. 199, and especially pp. 218–219, n. 52. Note also (*ibid.,* p. 218, n. 50) that restriction **(1)** above, whereby we excluded hypotheticals, is needed in order to get this result.

[91] I owe the idea for this proof to Professor Michael J. Pendlebury. Compare Spade, "The Logic of the Categorical," Theorem 2, pp. 199–201.

[92] See **(c)**, p. 301, above.

[93] See **(e)**, p. 302, above.

[94] Note the handling of the quantifier 'no', and compare **(5)**, p. 301, above.

[95] But see the caution in Spade, "The Logic of the Categorical," p. 219, n. 54.

[96] See **(b)**, p. 301, above.

All right, now let's do a little juggling with quantification theory. Move all the negations inside, reversing the quantifiers as needed as we go. Thus 'not every … is' becomes 'some … is not', and 'it is not the case that some … is' becomes 'every … is not'.

Let's call the proposition we end up with *p′*. It will consist of a string of quantified terms, followed by a propositional matrix (with perhaps some negations sprinkled around in the latter). Thus 'For every man *m* and every island *i*, $m \neq i$'. Proposition *p′* will be equivalent with *p.*

Proposition *p′* is what I was aiming at with all these logical manipulations. For there are some well known facts about propositions that begin with a string of quantifiers. First, if all the quantifiers are of all the same kind (all universal or all particular/existential), their order makes no difference. They can be shuffled around any way you please, and the result will always be equivalent with what you started with. But if the quantifiers are not all of the same kind, order is important. 'Everybody loves somebody' (that is, 'For everybody *h* there is somebody *j* such that *h* loves *j*) is not at all the same as 'Somebody everybody loves ('There is somebody *j* such that everybody *h* loves *j*').

Nevertheless, even in those "mixed" cases, an existential (particular) quantifier can be validly moved to the right across a universal quantifier, or (what amounts to the same thing) a universal quantifier can be validly moved to the left across an existential (particular) one, although not in general the other way around. 'Somebody everybody loves' implies 'Everybody loves somebody', but not conversely.

All right, we're finally ready. Recall that we are inquiring about term *t* in proposition *p.* Form *p′* from *p,* as instructed above. Now — basic move — take *p′*, pull out term *t* (with its quantifier), and stick it unchanged at the extreme left of *p′*. Call the resulting proposition *p″*.

Term *t* is either universally or existentially quantified in *p″*. If it is universally quantified, then *p′* implies *p″*, since universal quantifiers can always be valid moved to the left. Therefore, since *p* is equivalent to *p′*, *p* also implies *p″*. And since *p″* has the universally quantified *t* at the extreme left, in the position of greatest scope, we can infer from it any arbitrary singular *by universal instantiation.* Therefore, since *p* implies *p″* and since *p″* implies any arbitrary singular, *descent to any arbitrary singular holds for term t in proposition p.*

On the other hand, if *t* is existentially quantified in *p″*, then *p″* implies *p′*, since existential quantifiers can always be validly moved to the right. And since, *p′* is equivalent to *p,* therefore *p″* also implies *p.* Since *p″* has the existentially quantified *t* at the extreme left, in the position of greatest scope, we can infer *p″* from any arbitrary singular *by existential generalization.* Therefore, since any arbitrary singular implies *p″* and since *p″* implies *p, ascent from any arbitrary singular holds for term t in proposition p.*

Since *t* is either universally or existentially quantified in *p″*, it follows that we always have either descent from the original proposition to any arbitrary singular or else ascent to it from any arbitrary singular. And that is what we were aiming to show.

iii. Consequences of the First Two Results

Combining our first two results, we get the extremely important conclusion that for any term in any categorical proposition of the kinds we are considering, either descent to an arbitrary singular or ascent from any an arbitrary singular holds, but not both.

I emphasize that this is *our* result. I know of no one who actually stated this conclusion in the Middle Ages. But I also want to emphasize that the result is a genuine one. And it has important consequences of its own. For it means that, the variations we find in the definitions of the various main kinds of personal supposition are usually variations that don't matter.

For example, consider confused and distributive supposition. Burley seems to think of it merely in terms of descent to an arbitrary singular. Ockham requires both descent to a conjunction of all the singulars and the failure of ascent from an arbitrary singular. Buridan seems to require with Ockham the failure of ascent from an arbitrary singular, but he doesn't come right out and say so.[97]

But it all comes to the same thing. Descent to an arbitrary singular holds exactly when descent to a conjunction of all the singulars holds as well.[98] And whenever that happens, ascent from an arbitrary singular will automatically fail in virtue of the results we have just derived. So Ockham's explicitly stipulating it as a separate clause of his definition is really unnecessary; it is already implied by the rest of his definition. And Buridan can likewise be implicit about the requirement; there is no need to say it given the rest of what he says.

Likewise, we have seen[99] that Burley omits the ascent requirement from his definition of determinate supposition. But again, it doesn't matter. If ascent from an arbitrary singular did *not* hold, then we know that descent to an arbitrary singular would, and therefore so would descent to a conjunction of all the singulars. But that would be confused and distributive supposition. Unless therefore determinate supposition is going to turn out to be exactly the same thing as confused and distributive supposition, ascent from an arbitrary singular will have to be possible, and there is no need to make a big deal out of it by specifying it as a separate clause of the definition.

Again, for merely confused supposition, Buridan neglects any mention of the possibility of ascent from an arbitrary singular, although he does say that descent to an arbitrary singular fails.[100] But since we now know that we never have both, there was really no need for him to belabor the point.

By and large, therefore, our authors' differences in their definitions of the various branches of personal supposition are differences of style only, not of substance. This explains why, although their definitions differ, they nevertheless usually end up agreeing about which kind of personal supposition a term has in any given case.

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[97] See p. 283 above.

[98] See p. 300 above.

[99] See p. 282 above.

[100] See p. 286 above.

iv. Third Important Result

I said that authors' differences in the various kinds of personal supposition "usually" don't matter. But there is one case where it does. Ockham differs from Burly and Buridan by requiring descent to a disjoint term in the case of merely confused supposition, whereas the other two in effect require only the failure of descent to either a disjunction or conjunction of all the singulars.[101] Now we have already seen that there are cases where determinate or confused and distributive supposition will not work, and yet descent to a disjoint term fails as well.[102] In such cases, descent to a conjoint term will hold. Indeed, there is an interesting result that I will mention but not try to prove here[103]: It is always possible to replace a universally quantified term (with its quantifier) by a conjoint term, and to replace an existentially quantified term (with its quantifier) by a disjoint term, preserving equivalence in the process. In other words, quantified terms may be viewed in the theory of descent and ascent as merely a kind of shorthand abbreviation for the corresponding complex terms, conjunctive or disjunctive as the case may be.

Therefore, the fact that Ockham (and others) appealed to disjoint terms *only* in the case of merely confused supposition, and the fact that others appealed to conjoint terms only in especially troublesome cases, must be viewed as a mark of desperation, as I suggested earlier.[104] For such devices, it turns out, were available all along. If it is legitimate to appeal to complex terms in these special cases, it was also legitimate to appeal to them all along, even in cases where other kinds of descent were available as well. Yet they were *not* appealed to except when other kinds of descent failed.

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[101] I say "in effect" because Burley does require ascent from an arbitrary singular, even though that clause is redundant since he also requires that descent to a conjunction of all the singulars (and so to any arbitrary singular) fail. Again, Buridan requires only that descent to a disjunction of all the singulars and descent to any arbitrary singular fail. But this comes to the same thing, as we now see.

[102] See pp. 288–290 above.

[103] For the proof, see Spade, "The Logic of the Categorical," Theorem 3, pp. 201–202. The proof proceeds by mathematical induction in a way I don't for a moment suppose any mediaeval author ever articulated. But, let me say it again, I am here concerned not with what mediaeval authors actually did, but with the logical structures exhibited by what they did, whether they realized it and said so or not.

[104] See p. 286 above for disjoint terms. All the more so for conjoint terms.

B. Additional Reading

For additional reading on the material covered in this chapter, see: Paul Vincent Spade, "The Logic of the Categorical." (That paper is crucial for this chapter.) See also John J. Swiniarski, "A New Presentation of Ockham's Theory of Supposition"; Gareth D. Matthews, "*Suppositio* and Quantification in Ockham." My "The Logic of the Categorical" disagrees strongly with certain conclusions in Graham Priest and Stephen Read, "Merely Confused Supposition," which means you should read it as well, for purposes of this chapter. John Corcoran and John Swiniarski, "Logical Structures of Ockham's Theory of Supposition," is an outstanding paper, although I disagree with certain claims in it. Despite the disagreements, reflection on those claims led to some of the results in this chapter.

Chapter 10: Ampliation

The last topic I want to talk about in this book is the theory of "ampliation." Ampliation may be regarded as the intersection of the theory of time and modality with the theory of supposition. Questions of time and modality lead quickly into enormously interesting and deep metaphysical issues, but I am not going to pursue those in this book.[1] Instead, I will confine myself to time and modality only insofar as they affect the theory of supposition.

They affect only the first half of supposition-theory, the theory of "supposition proper."[2] That is, they affect supposition theory with respect to the question what — or "what all" — a term supposits for in a given occurrence. They do not affect the theory of "modes of personal supposition" (the theory of descent and ascent), except insofar as what a term supposits for determines what the "singulars" are that are available for a possible descent or ascent.

I will concentrate in this chapter primarily on Ockham,[3] although I will also be making frequent observations about other authors too. In some authors, the details of the theory are quite different than they are in Ockham's, but Ockham's version was at least a fairly standard one in the fourteenth century, and will suffice for introducing the themes I want to talk about in this chapter.

A. Modality

Let's begin with the theory of modality. At the beginning of Part II of his *Summa logicae* (Text **(42)**), Ockham in quite standard fashion divides categorical

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[1] For introductions to some of these problems, see Knuuttila, "Modal Logic"; Normore, "Future Contingents"; and William of Ockham, *Predestination, God's Foreknowledge and Future Contingents.* This is just the beginning, though.

[2] See Ch. 8, p. 243 , above.

[3] There is some irony in this, since Ockham very rarely actually uses the term 'ampliation' or its cognates. But he certainly does have the doctrine others call by that name. I will comment more on this odd fact below.

propositions into those that are "assertoric"[4] and those that are "modal" or "about a mode."[5]

1. Assertoric vs. Modal Propositions

The distinction between assertoric and modal propositions can be drawn as follows — and this was a fairly standard way of doing it: An assertoric categorical proposition just states a connection between subject and predicate — or, if it is negative, states a disconnection. Just what kind of connection or disconnection is involved here depends of course on your semantic theory for categorical propositions. But on any such theory, the connection or disconnection stated may turn out to be one of several kinds of "modes." For example, it may be *necessary, impossible, contingent or possible.*

These four are the main traditional "modes." But Ockham lists others as well in Text **(42)**, and other authors sometimes allowed at least some of these others as legitimate "modes" too. The connection or disconnection, Ockham says, may be: *true* or *false* (these were generally regarded as rather odd, limiting cases of modes). It may be: *known, unknown, spoken, written, conceived, believed, opined*[6] or *doubted.* All of these are "modes" or "ways"[7] in which the connection or disconnection of subject and predicate may turn out.

Now a modal proposition is one in which one of these modes is explicitly expressed or asserted. Thus 'Every man is an ass' is an impossible proposition, but is not thereby a "modal" proposition. Nothing is said to be impossible in it. The proposition is only assertoric, because the fact that it is impossible for every man to be an ass is not what the proposition asserts — and neither is any other modal claim.

On the other hand, 'For every man to be an ass is impossible' *is* a modal proposition because there the impossibility is explicitly asserted. So too, for that matter, 'For every man to be an ass is possible' is also modal, although it is false. It is modal because it too explicitly asserts a "mode."

The point then is this: Modal descriptions can be applied to any proposition whatever. But only propositions that themselves actually assert some kind of modal description are "modal propositions"; the rest are assertoric.

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[4] "assertoric" = *"de inesse,"* literally "about being in." This terminology was quite standard, although it perhaps suggests an inherence theory of the copula that Ockham emphatically did not accept.

[5] Note that Ockham does not here distinguish "modal" propositions from those that are "about a mode," as other authors do. See p. 313 below.

[6] I do not know what if any distinction Ockham intends here between 'believed' and 'opined'.

[7] *'Modus'* is just one Latin way of saying "way."

2. Two Syntactical Constructions for Modal Propositions

In Text **(47)**, Ockham distinguishes syntactically between two kinds of modal propositions, corresponding roughly to the modern notions of *de dicto* and *de re* modality.[8] The correspondence is only rough, though, so I prefer not to use the modern terminology and to do things Ockham's way.

The first kind of modal proposition is formed from a *dictum* — that is, from one of those accusative-plus-infinitive expressions[9] — plus a copula and one of the modal words. Thus, for example, 'For every man to be an animal is necessary', 'For a man to run is contingent'. The examples Ockham gives all have the modal word at the end, in predicate position. And although what he says does not strictly require that, it will nevertheless be clear when it comes to truth conditions for such propositions that Ockham interprets the modal word in them as the predicate no matter where it actually occurs.

In the second kind of modal proposition, the modal word is not attached to a *dictum.* Instead the proposition has some other construction. Whereas in modal propositions of the first kind what we have is a modal predicate (a noun or adjective), in modal propositions of the second kind what we have is a model *operator* that generally takes an adverbial or verbal form, but may take other forms as well. Thus, 'Every man necessarily is an animal', 'Every man of necessity is an animal', 'A man can run'.

Ockham claims (Text **(47)**) that modal propositions of the first kind, those formed from a *dictum* plus a modal predicate, are ambiguous or equivocal, and so have to be "distinguished" into various senses.[10] The distinction is made, Ockham says, according to "composition and division."

Mediaeval logicians developed an elaborate theory of "composition and division," and distinguished a "composite sense" and a "divided sense" for a wide range of cases. Whole treatises were written *De sensu composito et diviso* — for example, Heytesbury's.[11] The distinction has its ultimate origins in Aristotle's *Sophistic Refutations* 4, $166^{a}23$–38, and 20, $177^{a}33$–$^{b}34$, but mediaeval authors developed it in ways that had little to do with what Aristotle had in mind.

The general theory need not detain us here. Ockham applies it to this particular case as follows: A modal proposition of the first kind, one formed from a *dictum* plus a modal predicate, may be taken **(a)** in the "divided" sense — *in sensu divisionis* — and then, he says, it is equipollent to the corresponding modal proposition of the second kind, the corresponding proposition formed without a *dictum.* For example, 'For every man to be an animal is necessary', when taken in the divided sense, amounts to the same as 'Every man necessarily is an animal'.

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[8] If you are not familiar with these notions, a good, brief introduction may be found in LePore, *"De dicto."*

[9] See Ch. 6, p. 171, above.

[10] He explicitly allows this kind of equivocation in mental language, where it poses problems, in my view. See Ch. 4, above, and Spade, "Synonymy and Equivocation in Ockham's Mental Language."

[11] See William Heytesbury, "The Compounded and Divided Senses."

We will look at modal propositions of the first kind taken in this "divided" sense later on, when we consider the second kind of modal proposition, with which they are equipollent.

Alternatively, a modal proposition of the first kind, one with a *dictum,* may be taken **(b)** in the "composite" sense — *in sensu compositionis* — and in that case, Ockham says, the proposition just predicates the modal predicate of the proposition of which the *dictum* is the *dictum*. For example, 'For every man to be an animal is necessary', when taken in the composite sense, just means that 'Every man is an animal' (the proposition from which the *dictum* 'for every man to be an animal' is formed) is a necessary proposition.

We have then the following arrangement:

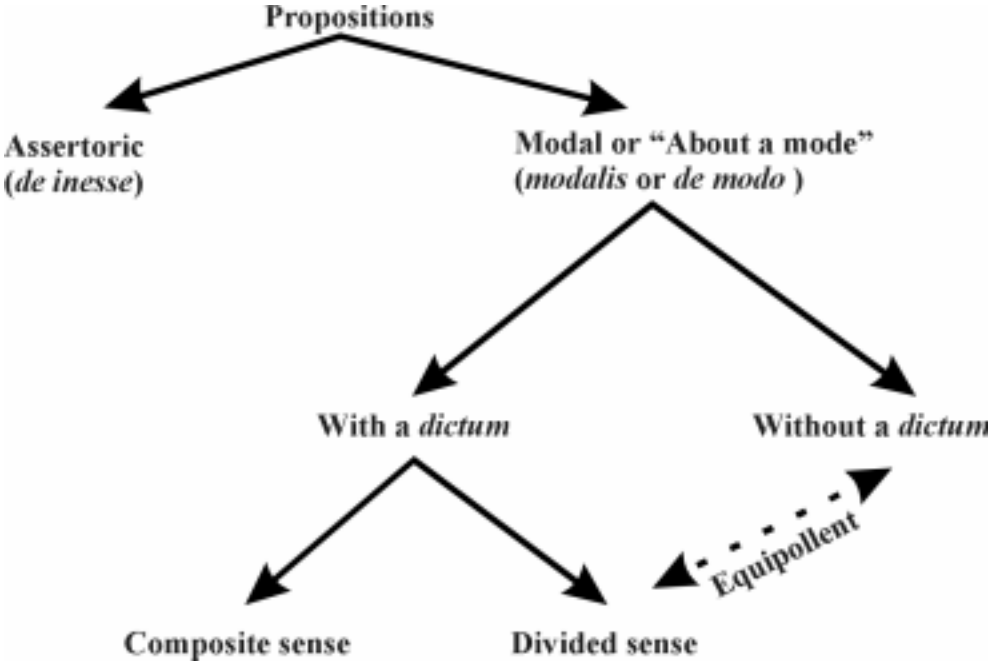

Figure 20: Ockham on Modal Propositions

Notice something here. When read in the composite sense, the *dictum* in modal propositions of the first kind is a term in material supposition, suppositing for the proposition from which the *dictum* was formed. We saw this kind of thing when we discussed material supposition earlier.[12] In such a case the modal word is a predicate noun or adjective. What we have then is really just a special instance of the standard subject/predicate form of proposition. Furthermore, in the composite sense the proposition 'For every man to be an animal is necessary' is true iff what the subject ('for every man to be an animal') supposits for — namely, the proposition 'Every man is an animal' — is one of the things the predicate 'necessary' supposits for.

[12] See Ch. 8, p. 259–260, above.

In other words, modal propositions with a *dictum* and read in the composite sense require no new account of truth conditions. The truth conditions Ockham already gave for standard subject/predicate categoricals in *Summa logicae,* II.2–4 (Texts **(43)–(45)**) — truth conditions in terms of the subjects' and the predicates' suppositing for all or for some or for none of the same things, and so on — will apply just as well when the subject is a *dictum* in material supposition and the predicate is a modal term as they do in any other case.

For just this reason, some authors were not willing to call such propositions "modal" at all. William of Sherwood, for instance, says[13]:

> To this it must be said that expressions like this, [both] according to the form of speech and according to the construction,[14] have the *dictum* itself as subject and the mode as predicate. And so they ought not to be called "modal." Neither does Aristotle call them "modal," but rather "about a mode."

Here Sherwood is saying that such propositions are "about a mode" — *de modo* — but they are not strictly "modal." The idea for him is that a categorical proposition is modal only if the connection or copula in it is explicitly "modified" — that is, governed by a modal word. And furthermore, not just any copula will do; it has to be the main copula (if there are more than one). Now in 'For every man to be an animal is necessary', the copula that is modified by the modal word 'necessary' is not the main copula, the 'is', but rather the subordinate copula, to 'to be' in the *dictum.* That is the connection this proposition says is necessary. Hence, Sherwood says, propositions like this are not strictly "modal" at all, but rather "about a mode." He attributes this distinction to Aristotle, but that seems to be stretching things a bit.

Burley too does not want to allow such propositions to be called "modal."[15] Ockham (Text **(47)**, first paragraph) recognizes that there is some distinction to be made here, but he himself doesn't seem to think it makes much difference. And so he is willing to call all these kinds of propositions equally "modal," provided we make the necessary distinctions and are not confused.

a. Truth Conditions for Modal Propositions with a *Dictum* and Read in the Composite Sense

Let's now look more closely at the truth conditions for modal propositions containing a *dictum* and read in the composite sense. Such a proposition in which the predicate is the word 'necessary', for example, is true in the composite sense iff the proposition from which the *dictum* is formed is in fact "necessary." And

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[13] Lohr ed., § 1.7.3, p. 234.94–97 (= Grabmann ed., p. 42.27–30). See Kretzmann trans., pp. 44–45.

[14] Don't worry about this distinction.

[15] See Burley, *De puritate,* pp. 235.14–237.6; Burley, *On the Purity of the Art of Logic: The Shorter Treatise,* Spade, trans., §§ (218)–(227).

when is that? Well, Ockham doesn't really go into the details, but what he does say is odd. For example (Text **(48)**):

> a proposition is not called "necessary" because it is always true but because it is true if it exists, and cannot be false.

Don't be put off by the apparent circularity of the "cannot be false" clause; I'll get to that in a moment. But first notice the "if it exists"-clause. The basis for this if of course the notion that the bearer of truth and falsehood is the sentence-token (the individual utterance, inscription or propositional thought-act), not some kind of sentence–type, much less some kind of proposition in the modern sense (that is, something "expressed" by the sentence-token). That much is just standard nominalist doctrine by the fourteenth-century.[16] Also standard doctrine is the claim that these proposition-tokens, these individual utterance, inscriptions or thoughts, are not the bearers of truth value unless they exist. Individual utterances are gone as soon as they are completed, and inscriptions can be written and then erased. So too thoughts stop being thoughts once we're done thinking them. The existence of one of these bearers of truth value, therefore, is a very contingent affair. And, as Ockham says (Text **(48)**), "if it does not exist, it is not true."

The idea then is this. The proposition (-token) 'God exists', say, is necessary not because it is always true, or because it "has" to be true. For the token need not exist at all, in which case it has no truth value, either truth or falsehood. Rather, it is necessary, he says, because "it is true if it exists, and cannot be false."

The 'if' here is almost certainly to be read in a fairly strong sense, so that the second conjunct, the "cannot be false"-clause, is redundant. If the proposition has to be true whenever it exists, then of course it cannot be false, since in order to be false it has to exist, and then, we said, is isn't false but true. This conjecture is confirmed by the way Ockham gives a correlative account of impossibility. An impossible proposition, he says in analogous manner (Text **(48)**), is one that "is false if it exists." Nothing is said here about not being *able* to be true. This suggests that the corresponding clause in the account of necessity, about not being able to be false, is strictly idle.

Since the contingent is that which is neither necessary nor impossible, this account of necessity and impossibility will also give us an account of contingency; we simply deny the two conditionals 'if it exists it is true' and 'if it exists it if false'. Ockham in fact explicitly says (Text **(48)**) that we can get an account of contingency along these lines.[17]

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[16] See Ch. 6, pp. 178–180, above. Note that there is nothing inherently nominalist about this view. Realists could hold it too, and some did.

[17] Note that this confirms my claim that these conditionals are to be read in a fairly strong sense. If they were merely material conditionals, denying both of them would mean that the proposition-token did not exist at all, since (assuming bivalence, as Ockham did) if it did exist it would have to be either true or false. On material implication in Ockham, see Adams, "Did Ockham Know of Material and Strict Implication?," an excellent paper that definitively answers this old question.

Ockham recognizes in this same passage that we are going to need more resources than this to get an account of the epistemic and doxastic modalities.[18] But he apparently thinks it is sufficient to give an adequate account of the "alethic" modalities.[19] And here he is dead wrong.

i. Problems for this Account

There are merely apparent problems with this account of modality, and then there are real problems.[20] Let me give you the apparent problems first.

Consider the account of necessity. According to it, the proposition-token 'Some proposition exists' is necessary. For if it exists, it is true. And it cannot be false, since in order to be false it would have to exist, and then it would be true. Similarly, consider the proposition-token '*This* proposition-token exists', indicating itself. It too is necessary, for the same reason.

Now the very basis for Ockham's account of necessity is the realization that the existence of proposition-tokens is a transient and contingent affair, not a matter of necessity. So this account of necessity seems to have consequences that are in danger of violating the very basis of the theory.

Those same consequences also seem to be skirting outright heresy. The claim that the proposition-token 'This proposition-token exists' is necessary appears at least to conflict with the doctrine of creation, according to which the existence of that proposition-token ought to be contingent and not necessary, insofar as it is a creature.

These problems are more apparent than real. They can no doubt be cleaned up by making suitable distinctions. After all, we haven't really changed our views about the metaphysical status of proposition-tokens.

More serious, however, is the problem of trying to define possibility in a way that preserves the usual modal relations, when necessity and impossibility are treated as Ockham does. Shall we say that a proposition-token is possible iff it is not impossible? That is,[21]

(1) $\c{c}p \leftrightarrow \ .\mathit{Ip}.$

Or shall we say that a proposition-token is possible iff its contradictory (its negation) is not necessary? That is,[22]

(2) $\c{c}p \leftrightarrow \ . \quad .p$

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[18] That is, modes like "known," "unknown," "believed," "disbelieved," etc.

[19] The four traditional modalities, "necessary," "impossible," "possible," "contingent."

[20] With this section, see Spade, "Les modalités aléthiques selon Ockham."

[21] The diamond ('¢') is the standard piece of logical notation for 'possible'. The "tilde" is for negation. I use *'I'* for 'impossible'.

[22] The square (' ') is the standard piece of notation for 'necessary'.

Both of these relations are perfectly standard ones in modal logic, relations we surely want to continue to maintain. A modal logic in which one of these failed would be very odd indeed. But let's see what happens.

If we adopt **(1)**, then to say *p* is possible is to say it might exist and yet not be false, since an impossible proposition is just one that "is false if it exists." That is, it might be *true.* But if we adopt **(2)**, then to say *p* is possible is to say that its contradictory opposite is not necessary. That is, its contradictory opposite might exist and yet not be true — in short, its contradictory might be *false.*

Unfortunately, these two formulae do not give the same results. According to **(1)**, the proposition 'No proposition is negative' is not possible but rather impossible. It cannot be true, since in order to be true it would have to exist, and then it would be false, since it is itself negative. According to **(2)**, however, the proposition 'No proposition is negative' would indeed by possible, since its contradictory 'Some proposition is negative' might very well be false. It would be false, for example, if all other sentence-tokens were destroyed and it were the only one in existence.

But matters are even worse than this. It is not just that these two formulae, which ought to give the same results if we are to preserve the usual relations among the modal notions, do not in fact give the same results. Each of these formulae is incoherent all by itself, without taking account of the other. According to **(1)**, the proposition 'No proposition is affirmative' is possible, since it would be true if it turned out, for instance, to be the only existing proposition-token. Yet 'Some proposition is affirmative' is necessary, since if it exists it is true (and it cannot be false). So here we have a necessary proposition the contradictory opposite of which is possible, not impossible. And that is not what we want at all.

On the other hand, formula **(2)** fares no better. On that approach, the proposition 'No proposition is negative' is possible, as we just saw, since its contradictory opposite 'Some proposition is negative' might well be false. Yet the proposition 'No proposition is negative' is also *impossible,* since if it exists it is surely false. (It is a negative proposition itself.) So, on this account, the same proposition is both possible and impossible, which is a hopeless mess.

It seems to me, therefore, that Ockham simply had not thought this through very carefully. And because of this failure, he really has no full and adequate account of the truth conditions for modal proposition with a *dictum* and taken in the composite sense. Fortunately, Ockham doesn't abide by his own definitions very carefully, and continues to say things that conform to the standard modal relations we want to keep, even though his "official" view doesn't allow them.

Buridan has a theory that is much better on this score. He adopts a view that avoids these difficulties, even though he too holds that the bearer of truth value, the proposition-token, must exist in order to do its job.

Buridan adopts an account that divorces the modal notions entirely (at least the alethic ones) from the question of truth value. For Buridan, a proposition is necessary iff what it says to be so — and that is cashed out in terms of the suppositа of the subject and the supposita of the predicate — has to be so. Similarly,

a proposition is possible iff what it says to be so can in fact be so. Here is what he says[23]:

> The third conclusion [is] that some proposition is possible that cannot be true. This is proved because from a possible antecedent an impossible consequent never follows, as I assume from the *Prior Analytics*.[24] And yet from the [proposition] 'Every proposition is affirmative', which is possible, there follows the [proposition] 'No proposition is negative'; therefore, the latter is possible. And yet it cannot be true. So it is plain that a proposition is not called possible from the fact that it can be true, or impossible because it cannot be true. Rather it is called possible because as it signifies, so the case can be (taking these words in the good sense, according to the lessons that were given in the second chapter[25]), and impossible because so the case cannot be, and so on.

Note that nothing is said here about the truth of falsehood of the proposition. On this account, then, the proposition 'No proposition is negative' is possible, since what that proposition says to be the case might very well be the case, if all negative proposition-tokens are destroyed. But while it is possible, it is not possibly *true.* For in order to be true, it has to exist, and if it exists, then what it says is *not* so.[26]

b. Truth Conditions for Other Modal Propositions

So much then for modal propositions with a *dictum* and taken in the composite sense. What about such propositions taken in the divided sense? Well, as we saw (Text **(47)**), Ockham says these are equivalent in sense to modal propositions without a *dictum.* So we can treat them together.

First of all, Ockham observes (Text **(49)**) that the truth conditions for this kind of modal proposition are not the same as those for the propositions we have just been considering. For example, 'For everything true to be true is necessary' is true in the composite sense.[27] But 'Everything true necessarily is true'[28] is *not* true, since some truths are contingent.

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[23] Buridan, *Sophismata,* Ch. 8, Scott ed., pp. 124–125; Scott trans., p. 182.

[24] Aristotle, *Prior Analytics* I.13, $32^{a}18$–21, and II.2, $53^{b}7$–8.

[25] That is, as being really about supposition and not about signification at all. See Texts **(70)**, conclusion 14, and **(71)**.

[26] On Buridan's theory of these things, see Prior's very elegant paper, "The Possibly-True and the Possible."

[27] Strictly, this isn't so unless it is necessary that some true proposition-token exists. We can take perhaps this as an indication of Ockham's carelessness about his own definitions of the modal notions (see p. 316 above). Alternatively, we can recall that, for some authors, God himself is a true mental proposition (see Ch. 4, pp. 127–128, above).

[28] Ockham's Latin here is strictly ambiguous, but it is clear that he takes the 'necessarily' as modifying the 'is', not the first 'true'.

What then are the truth conditions for such propositions — that is, for modal propositions without a *dictum,* or modal propositions with a *dictum* but taken in the divided sense? Here is what he says (Text **(49)**):

> For this reason, you need to know that for the truth of such propositions it is required that the predicate, under its proper form, be applicable to what the subject supposits for, or to a pronoun indicating what the subject supposits for, so that, in other words, the mode expressed in such a proposition is truly predicated of an assertoric proposition in which the very same predicate is predicated of a pronoun indicating what the subject supposits for, analogously to what was said about for propositions about the past and [those] about the future.

The business about the past and the future we'll look at later on. Ockham goes on to give an example. Go back to the proposition 'Everything true necessarily is true', which we said is false. The truth conditions for that proposition run like this:

> 'Everything true necessarily is true' is true iff each proposition of the form 'This is true' is necessary, where the 'this' indicates one of the supposita of the subject term (that is, of the first 'true' in 'Everything true necessarily is true').

Ockham gives another interesting example in the same passage: The proposition 'The creator is able not to be God' is false, since the proposition 'This is not God', indicating the creator (namely, God), is not a possible proposition. (God can't help but be God!) On the other hand, the converse of that proposition, namely 'God is able not to be the creator', is true, since the proposition 'This is not the creator', indicating God, is a possible proposition, even though fortunately for us it is in fact false. (Creation is contingent, after all.)

The general rule of truth that can be extracted from this passage (Text **(49)**) runs like this. Consider a standard categorical proposition p of the subject/predicate form, in which the copula is modified by some modal verb or adverb corresponding to the modal predicate m (as for example 'can' corresponds to 'possible', and 'necessarily' to 'necessary'). Let σ be the subject of p, and let π be the predicate of p. (In other words, p fits the general form "(Every, some) σ m-ly is (not) π."[29]) Then form all propositions p_1, p_2, …, of the form '*This* is a π', where the demonstrative 'this' is taken as indicating one by one each of the supposita of σ. Then, p is true under the following conditions:

> (for p a universal affirmative) m is truly predicable of every p_i.[30]
>
> (for p a particular affirmative) m is truly predicable of some p_i.

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[29] See Ch. 2, p. 13, above, on the general form of categorical propositions.

[30] This has to be taken with existential import.

> (for p a universal negative) m is truly predicable of no p_i.
>
> (for p a particular negative) there is some p_i of which m is not truly predicable, or else σ supposits for nothing at all, so that there are no propositions p_i.[31]

In order to apply Ockham's truth conditions here, we have to have propositions 'This is a π', indicating each of the supposita of σ. So we are brought around to the question: just what does the subject term supposit for in these propositions?

B. Ampliation

This brings us to that part of supposition theory called "ampliation." It is part of the theory of "supposition proper," since it pertains to the question what (or "what all") a term supposits for in a given occurrence.

What then is ampliation? Well, in general, ampliation occur when the supposition of a term is extended in some way, so that it supposits for more than it ordinarily does. Peter of Spain defines it like this (Text **(23)**:

> Ampliation is the extension of a common term from a lesser supposition to a greater one.

He goes on to give an example that indicates he is thinking of cases in which a term supposits not only for presently existing things but also for things that do not exist at present. Hence, in practice, ampliation for Peter extends the supposition of a term so that it supposits not only for present things, but for other things as well. The point is that you *start from the present.*

Lambert of Auxerre has essentially the same idea (Text **(26)**), but says more or less explicitly that ampliation involves extending the supposition of a term *beyond the present.* Buridan also says this (Text **(58)**. Albert of Saxony gives perhaps the clearest statement[32]:

> Hence ampliation is the taking of a term for one or more things beyond what actually exists, for which thing or things [the term] is denoted to be taken, by the proposition in which [the term] occurs.

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[31] The second alternative is messy, but is required since the universal affirmative contradictory of the particular negative has existential import.

[32] Albert of Saxony, *Perutilis logica* II.10, fol. 15^{rb}. Since this text is not readily available, here is the Latin: "Unde ampliatio est acceptio alicujus termini pro aliquo vel pro aliquibus ultra hoc quod actualiter est pro quo vel pro quibus accipi denotatur per propositionem in qua ponitur."

1. Rules for Ampliation

Now there are certain rules that govern when and how this ampliation can occur. By the fourteenth century, the rules were fairly standard, with some disagreements I shall mention later. Albert of Saxony, for example, gives fairly clear versions of them.[33]

In general, ampliation occurs in two kinds of contexts: modal contexts (which is how we got to this topic in this book) and tensed contexts. Tense and modality were almost always treated together in the Middle Ages; they were intimately connected. This is not to say that all mediaevals reduced modality to temporality, as for example Diodorus Cronus did.[34] It is only to say that they did not think the linkage of time and modality was anything odd and calling for special justification.

There is one last point you have to know about before we get started. For many authors (not Ockham or Burley, as we shall see), discrete terms cannot be ampliated. Peter of Spain says this, for example, shortly after giving the definition of ampliation I quoted earlier (Text **(23)**: "Now I say 'a common term' because a discrete term like 'Socrates' is neither restricted nor ampliated." And Buridan says the same thing[35]:

> But there is no ampliation, because the subject is a singular term, the supposition of which cannot be ampliated, since it cannot supposit except for one [thing] only.

Again[36]:

> Hence, indicating Socrates, the term 'this man' supposits for Socrates and cannot supposit for anyone else in accordance with this indicating. Therefore it cannot be ampliated by any verb or predicate to supposit for [anything] else.

Thus ampliation, at least according to some prominent authors, applies only to general terms. (File that fact away for future reference.) How then does it all work?

For Ockham, the key text here is *Summa of Logic* I.72, from which we can extract several principles. For subject terms:

> **(1)** With respect to any verb whatsoever, a subject term in personal supposition can supposit for its present significates — that is, for those things it can be truly predicated of by

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[33] Quoted in Bocheński, *A History of Formal Logic,* p. 174.

[34] Recall from Ch. 2, p. 29, above, that Diodorus held that the possible is what is or will be.

[35] Buridan, *Sophismata,* Ch. 5, sophism 3, Scott ed., p. 93; Scott trans., p. 147.

[36] *Ibid.,* sophism 10, Scott ed., p. 101; Scott trans., p. 157.

means of a present tensed copula. It can supposit for other things only in special cases.

Note the bias here. It is very much like the bias in favor of personal supposition we saw earlier,[37] according to which a term can always supposit personally, but can supposit materially or simply only in special circumstances. In those special circumstances, you will recall, the proposition was ambiguous or equivocal, and had to be "distinguished" according to its various senses. The same thing happens here in tensed and modal contexts, with the same difficulties about equivocation in mental language.[38]

(2) A subject term can supposit for its future significates only with respect to a future-tensed verb, a future participle, etc.[39] In such a case, the proposition has to be distinguished, since the subject may be taken either for present things or for future ones.

(3) Similarly for the past. A subject term can supposit for its past significates only with respect to a past-tensed verb or a perfect participle, etc. In those cases the proposition has to be distinguished.

(4) Similarly for modality. A subject term can supposit for all its possible significates (including the past and future ones) only with respect to a modal verb, participle, etc. In those cases the proposition has to be distinguished.

(Note, with respect to **(4)**, that it doesn't make any difference what kind of modality we're talking about. The term 'man' supposits for exactly the same things in 'Every man *can* run' and in 'Every man *necessarily* runs', although of course other features of the truth conditions will be different.)

Thus, for example, the proposition 'Every man will run' must be distinguished. It can either mean (in effect) "Every presently existing man will run," in which case the descent to singulars goes: "Man_1 will run and man_2 will run and …," for all present men. Or else it can mean "Every future man will run," in which case the descent goes: "Man_1 will run and man_2 will run and …," for all future men.

Notice that for Ockham, past- or future-tensed propositions and all modal propositions (except those with a *dictum* and read in the composite sense) are strictly equivocal. He says that the subject term supposits *either* for the one group of supposita *or* for the other group. He definitely does not say it supposits for the sum or union of the two groups. That is, he does not say that in our example the subject term 'man' supposits for all presently existing men and all future men to-

[37] See the discussion of Ockham's "Rule of Supposition," Ch. 8, pp. 269–270, above.

[38] *Ibid.*

[39] And also with respect to a modal verb, participle, etc. Modality trumps all tenses. See **(4)** below.

gether. On this point, Burley agrees (*Purity,* §§ 199–225), and so does William of Sherwood (Text **(29)**). It is perhaps significant to note that all these authors are English, and that none of them actually uses the word 'ampliation' to describe what is going on here.

On the other hand, continental authors often disagreed with Ockham and the others on this point. Albert of Saxony, for instance, had a doctrine according to which in our proposition 'Every man will run', the subject term supposits for all present and all future men together, so that one would descend to singulars like this: Man_1 will run and man_2 will run and …," for all *present and future* men.[40] This is quite a different theory altogether. On this view, the proposition is not ambiguous, and there is no need to distinguish senses, as there was for Ockham. Buridan too has a theory like Albert's (Text **(59)**),[41] which is probably not surprising, since Albert was Buridan's student.[42]

It is perhaps worth noticing that both these people are continental, and both do use the term 'ampliation' explicitly. It begins to appear, therefore, subject to further research, that the actual term 'ampliation' (and its cognates) is for the most part a piece of continental, not English, vocabulary, and that going along with this little difference, the continentals tended to avoid making ampliative contexts ambiguous or equivocal, whereas Englishmen did just that. I can't say that this is an especially important difference, or even that it's definitely true, but if it is, it will perhaps help in narrowing down some otherwise anonymous treatises.

Let's pause now and review how we got here. We started with modality. Ockham divided modal propositions into those with a *dictum* and those without one. Those with a *dictum* admitted of both a composite and a divided sense. In the composite sense, such a proposition is true iff the modal predicate is truly predicable of the proposition for which the *dictum* supposits. In the divided sense the proposition is equivalent to a modal proposition without a *dictum.* Such a proposition is true iff the predicate (-adjective) corresponding to the modal verb or adverb is truly predicable of all or some or none or not all — depending on the categorical form of the original modal proposition —propositions of the form 'This is a π', where π is the predicate of the original proposition and 'this' indicates one of the supposita of the subject of the original proposition.

We now have a theory — and in fact *two* theories, an English and a continental theory — of what those supposita are.

C. Tense

It is obvious that exactly the same structure might have been applied to tensed propositions. That is, we might have divided propositions with tenses other than the plain present into those with a *dictum* and those without. Thus 'For every man to run is future' (*alternatively:* 'will be the case', 'will be true') vs. 'Every

[40] See Bocheński, *A History of Formal Logic,* p. 174, §§ 28.02–28.12.

[41] See also the diffuse discussion in John Buridan, *Sophismata* IV, 4th remark, Scott ed., pp. 62–64; Scott trans., pp. 113–115.

[42] See Ch. 2, p. 45, above.

man will run'. Those with a *dictum* might then have been distinguished according to a composite and a divided sense. In the composite sense, such a proposition would be true iff the temporal predicate is truly predicable of the proposition the *dictum* supposits for. In the divided sense the proposition would be equivalent to a temporal proposition without a *dictum* — for example, 'Every man will run'. And the latter would be true iff every proposition of the form 'This runs' will be true, indicating one by one each of the supposita of the subject term 'man' in 'Every man will run'.

I say this might have been done. Nevertheless, for the most part, it wasn't. The only part of this structure that was developed was the part dealing with temporal propositions without a *dictum.* There the theory goes exactly the way we have described, and in fact it is noteworthy that this much of the theory of tense is *completely* parallel to the corresponding part of the theory of modality. For Ockham, the relevant passages are from *Summa of Logic* I.72, and Text **(47)**. The following passage is from the former, §§ 13–14:

> Yet it must be understood that this distinction [with respect to the supposition of the subject term] does not fall on the part of the predicate, but only on the part of the subject. Thus, 'Socrates was white' [or] 'Socrates can be white' does not have to be distinguished. This [is] because "the predicate appellates its form". This is to be understood not in the sense that [the predicate] supposits for itself or for a concept, but [in the sense] that by such a proposition [*P*] it is denoted that [another] proposition [*Q*] in which the very same predicate, under its own form (that is, it itself and none other), is predicated of that for which the subject [of *P*] supposits, or of a pronoun pointing precisely to that for which the subject [of *P*] supposits, *was* true if the proposition [*P*] is about the past, or that it *will be* true if the proposition [*P*] is about the future, or that it is *possible* if the first proposition [*P*] is about the possible, or [that it is] *necessary* if the first proposition [*P*] is about the necessary …
>
> For example, for the truth of 'A white was black' it is not required that 'A white is black' was ever true. Rather, it is required that '*This* is black' was true, pointing to something the subject supposits for in 'A white was black'.

Here Ockham is saying that for the truth of the past-tensed proposition 'A white was black', the corresponding present-tensed proposition 'A white is black' need not ever have been true, because of course that would be impossible. You never have something white and black (all over) at the same time. But what you do need is for a present-tensed proposition of the form '*This* is black' to have been true, where the 'this' indicates either something that is now white (although it may well have been black in the past) or else something that was white in the past (although of course not at the same time it was black). Burley has an alto-

gether similar doctrine (*Purity,* §§ 198–203), and so for he most part does Buridan, although I will say something more about that in a moment.[43]

It follows from this account that it is not always the case that a future-tensed proposition is true just in case the corresponding present-tensed proposition *will* be true, or that a past-tensed proposition is true just in case the corresponding present-tensed proposition was true, or likewise for modality. This does not hold in general. But it does hold for propositions with discrete subject terms. For example, the proposition 'This will run' is true iff the proposition 'This runs' will be true, where the 'this' indicates the same thing in both cases.

Furthermore, it follows from this that the distinctions between propositions with and without a *dictum,* and among propositions with a *dictum* between those in the composite sense and those in the divided sense — all these distinctions collapse for singular propositions, those with a discrete term as subject. Thus, the proposition 'This can run' (without a *dictum*) is true iff the proposition 'This runs', indicating the same thing, is a possible proposition. But that also provides the truth conditions for the proposition 'For this to run is possible', taken in the composite sense. The distinctions all collapse.[44]

D. Some Conclusions

The theory of tense I have just presented to you is basically Ockham's theory. Burley's seems to be the same in all essential respects. Buridan's seems to be very similar, although there may be some differences. Let's review and summarize the main points:

(1) The theory of temporal propositions is not developed for propositions with a *dictum,* but only for propositions without a *dictum* — that is, for explicitly *tensed* propositions. The theory of modality, however, is developed for both propositions without a *dictum* and for those with one.

(2) The distinctions between propositions with a *dictum* and those without, and among those with a *dictum* between the composite and the divided senses, are distinctions that make no difference when it comes to singular propositions, with discrete terms as subject. But they do make a difference for all other propositions.[45]

(3) The idea that in order to evaluate a future-tensed proposition, say, you "go" into the future and evaluate the corresponding present-tensed proposition, and that in order to

[43] See the references in n. 41 above.

[44] Strictly speaking, I should add that that this is so only for certain kinds of discrete subject terms: proper names or pure demonstratives. Discrete *descriptions,* such as 'this white thing', won't work here. Our mediaeval authors were quite aware of this point.

[45] With the proviso just noted in n. 44 above.

> evaluate a past-tensed proposition, you "go" into the past and evaluate the corresponding present-tensed proposition, and that in order to evaluate a modal proposition, you consider various modal alternatives to the actual state of affairs and evaluate the corresponding assertoric proposition in those alternatives — this overall idea works only for singular propositions, those with discrete terms.[46]

Clearly, this theory of tense and modality reduces the question of the truth values of tensed and modal propositions to the question of the truth values of present assertoric singular propositions, evaluated in the past or the future or in various modal alternatives. But we already know how to handle present assertoric singular propositions. Their truth conditions are unproblematic: if they are affirmative, the subject must supposit for something the predicate supposits for too, and if they are negative, the subject must fail to do that. And that is all there is to it.

1. An Inconsistent Triad

Before we leave the topic of tensed and modal propositions, and with it our book, there is one other point I should like to raise. I said just a moment ago that for Ockham, a future-tensed singular proposition, for example, is true just in case the corresponding present-tensed proposition will be true, where the discrete term that is the subject of the present-tensed proposition will supposit then for the same thing it supposits for now as subject of the future-tensed proposition. Similarly for the past tense and for modality.

This will work, and will give the results we want, only if a discrete term can supposit now, as the subject of a tensed or modal proposition, for the same thing it will or did or can supposit for as the subject of a present-tensed assertoric proposition.

Putting all this together, we see that the following three claims constitute an inconsistent triad:

> **(a)** Ockham's theory of truth conditions for tensed and modal propositions, as we have described.
>
> **(b)** The claim that discrete terms cannot be ampliated.
>
> **(c)** The notion of ampliation as the extending of the supposita of a term to include things besides those it can now be truly predicated of by means of a present-tensed, assertoric copula — in short, the notion that ampliation *begins from the actual present.*

[46] Ditto.

That these three claims really are inconsistent is clear. Consider the proposition 'Antichrist will run'. The subject 'Antichrist' (which we regard here as a proper name, not a job description) cannot now be truly predicated of anyone, since we cannot now truly say of anyone 'This is Antichrist' (we hope). Now if discrete terms cannot be ampliated (claim **(b)**), and if ampliation is what claim **(c)** say it is, then it follows that the term 'Antichrist' does not now supposit for anything at all in any proposition in which it occurs in personal supposition. But if it does not now supposit for anything, then when it comes to evaluating future- or past-tensed or modal singular propositions according to claim **(a)**, by looking to the corresponding present-tensed propositions in which the term 'Antichrist' is supposed to supposit for the same thing it does now, there is nothing for it to supposit for. Thus it would follow that not only does Antichrist not exist, but he will not exist and in deed cannot exist. Similarly, Antichrist will not run, Adam did not sin, and so on. In short, the theory breaks down.

The interesting thing about the three claims in this inconsistent triad is that I cannot find anyone who maintains all three. Ockham, of course, does not use the term 'ampliation' at all. But if we apply that term to what he says is going on in the subjects of tensed and modal propositions, then it is clear that nothing Ockham says gives us reason to affirm **(b)**. For him, discrete terms can be ampliated. Indeed, they had better be ampliated, or else his theory of truth conditions breaks down. The same thing holds for Burley. Buridan, on the other hand, explicitly says that discrete terms cannot be ampliated (claim **(b)**), and that ampliation is the adding of supposita to the present-tensed supposita of a term. But, curiously, I do not find that he ever explicitly says anything that would require that 'Antichrist' in 'Antichrist runs', which will be true (let us say), will supposit then for the same thing it supposits for now in 'Antichrist will run'. Indeed, he had better not say so, or he is in trouble, as we have just seen. What he does say indicates that 'Antichrist will run' amounts to, or may be analyzed as, "What is or will be Antichrist will run'. But it is not clear that this will yield the same problem.

Now of our inconsistent triad, Ockham and Burley hold both **(a)** and **(c)**, but not **(b)**. And Buridan holds **(b)** and **(c)**, but not, as far as I can tell, **(a)**. This suggests that there is yet a third way to avoid the difficulty, by perhaps holding **(a)** and **(b)**, but denying **(c)** — that is, by not defining ampliation in terms of adding to the *present*-tensed supposita of a term, but in some other way.

I bring this up because, although the details are still obscure (at least to me), there is a remark in Ashworth's *Language and Logic in the Post-Medieval Period* that is most suggestive in this connection. For Peter of Spain, Buridan, Albert of Saxony and other continental authors who take the trouble to say so explicitly, ampliation amounts to adding past or future or merely possible supposita to the presently existing supposita of a term. An unampliated term, then, supposits only for presently existing things. But, according to Ashworth, in the "post-medieval" period, certain authors — Ashworth cites Carbo, Campanella, John of St. Thomas and Breitkopf[47] — said that a term was ampliated when it "signifies[48]

[47] We've not talked about any of these people in this book, so don't worry about them.

[48] I take it this must be "supposited for."

things existing not only at the time designated by the verb of the proposition in which it appeared, but also at other times."[49]

If this is correct, it means that ampliation for these people does not add other supposita to the presently existing ones; instead, it adds other supposita to the ones existing at the time consignified by the verb, whether that time is the present or not. Unampliated terms, therefore, need not supposit only for existing things; they supposit only for things existing at the time consignified by the verb. On this approach one could hold — although I do not know whether these authors did so — a theory of truth conditions like Ockham's for tensed and modal propositions (that is, claim **(a)**), and also hold claim **(b)**, that discrete terms are not ampliated. No problems would arise.

I mention this possibility only as an area for further research. I'm not going to pursue it here. In fact, I'm not going to pursue *anything* more here, because this is the end of this book.

E. Additional Reading

For further reading on the material covered in this chapter, see: Paul Vincent Spade, "Les modalités aléthiques selon Ockham;" William of Ockham, *Summa of Logic* I.72; Freddoso and Schuurman, "Ockham's Theory of Truth Conditions" (= their introduction to William of Ockham, *Ockham's Theory of Propositions,* pp. 1–76); John Buridan, *Sophismata,* Ca. 5; John Buridan, *Sophisms on Meaning and Truth,* Ch. 5.

[49] Ashworth, *Language and Logic in the Post-Medieval Period,* p. 90.

Appendix 1: Chronological Table of Names

Date	Name and Notes
5th c. BC	Parmenides (Greek). First to argue for his views.
”	Zeno the Eleatic (Greek). Zeno’s Paradoxes. *Reductio*.
c. 470–399 BC	Socrates. Greek, although he didn’t write. Of little importance for our purposes (although of course of immense importance generally).
c. 430–c. 360 BC	Euclides of Megara (Greek). Founder of “Megarian” school of logic.
428/7–348/7 BC	Plato (Greek). Of no great importance for us. (But of enormous importance generally.)
4th c. BC	Eubulides (Greek). Pupil of Euclides of Megara. Reputed discoverer of the Liar Paradox.
”	Diodorus Cronus (Greek). Diodorean modality. The “Master Argument.”
”	Philo of Megara (Greek). Philonean implication.
384–322 BC	Aristotle (Greek). “Inventor of logic.”
c. 371–c. 286 BC	Theophrastus (Greek). Successor of Aristotle in the Lyceum.
c. 336–c. 265 BC	Zeno of Chition (Greek). Founder of the Old Stoics.
3rd c. BC	Cleanthes (Greek). Stoic. Successor of Zeno of Chition.

c. 279–206 BC	Chrysippus (Greek). Perhaps the equal of Aristotle, or even better. The five indemonstrables.
116–26 BC	Varro (Latin). Roman Eclectic. Cited by Augustine.
106–43 BC	Cicero (Latin). Translator of Greek technical terms. Source for information on the Stoics. Wrote a *Topics*.
1st c. BC	Andronicus of Rhodes (Greek). Compiler of Aristotle's works.
c. 50–c. 130 AD	Epictetus. Our best source for Diodorus' Master Argument.
2nd c. AD (all dates are AD from now on)	Apuleius (Latin). Wrote a *De interpretatione*.
129–c. 199	Galen (Greek). Medical man. Write an *Introduction to Logic*. Linked logic with medicine.
late 2nd–early 3rd c.	Sextus Empiricus (Greek). Our best source for the Stoics.
c. 200	Alexander of Aphrodisias (Greek). Important commentator on Aristotle.
3rd c.	Diogenes Laertius (Greek). Doxographer. Wrote a *Lives of the Philosophers*.
c. 232–before 306	Porphyry of Tyre. Pupil and biographer of Plotinus. Author of *Isagoge* (= *Introduction*) to Aristotle's *Categories*.
4th c.	Marius Victorinus (Latin). Translator of Aristotle's *Categories, De interpretatione*, and Porphyry's *Isagoge*.
354–430	Augustine (Latin). *De dialectica*.
late 5th c.	Martianus Capella (Latin). *On the Marriage of Philology and Mercury*.
480–524/5	Boethius (Latin). Important translator and commentator. The "Old Logic."
c. 500	Priscian. Famous Latin grammarian.

6th c.	John Philoponus. Greek commentator.
d. 749	John Damascene (John of Damascus). Greek author of a *Dialectica*, translated (probably by Robert Grosseteste) sometime between 1235 and 1242.
b. 1020	Michael Psellus (Greek). Was *not* the source for Peter of Spain's *Summulae logicales*.
1033–1109	Anselm (Latin — everything will be in Latin from now on unless otherwise specified). Use of dialectic in theology. *De grammatico*.
1079–1142	Peter Abelard. Last before the new translations of Greek works.
1096–1141	Hugh of St. Victor. *Didascalicon* (written in late 1120s).
c. 1115–1180	John of Salisbury. *Metalogicon* (1159). Important source for information on 12th c. logic.
1126–1198	Averroes (= Ibn Rushd, ابن رشد Great Muslim philosopher and commentator on Aristotle. Wrote in Arabic, although some of his works survive only in Hebrew or Latin (and translations therefrom). Known to Scholasticism as simply "the Commentator." Lived in Moorish Spain. Born at Cordoba.
mid-12th c.	Burgundio of Pisa. Translation of John Damascene's *Dialectica* attributed (probably falsely) to him.
1235–1253	Episcopacy of Robert Grosseteste, bishop of Lincoln, probably the one really responsible for the translation of John Damascene's *Dialectica*.
c. 1230s–1277	Peter of Spain. *Summulae logicales*. Later Pope John XXI. Probably best known of the "summulists."
d. 1264	Vincent of Beauvais. Encyclopedist.
c. 1214–1292	Roger Bacon. Wrote a *Summulae dialectices,* c. 1250. One of the "summulists."
c. 1250	Lambert of Auxerre. Wrote a *Logica*. One of the "summulists."

”	William of Sherwood. *Introduction to Logic*, *Syncategoremata*. Another one of the “summulists.”
1224/5–1274	Thomas Aquinas. Wrote a few logical works, of no great importance for us.
c. 1265–1308	John Duns Scotus. Interesting logical works.
late 13th c.	“Pseudo-Scotus.” Very interesting writings, by several people.
1275/80–1322	Peter Aureoli. French philosopher and theologian. Some influence on Ockham. Held a version of the *fictum*-theory of concepts.
c. 1275–1344/5	Walter Burley (= Burleigh). Realist opponent of Ockham. Extremely important figure. One of the first to revive terminist logic.
c. 1285–1347	William of Ockham. Nominalist. Extremely important.
c. 1295/1300–d. after 1358	John Buridan. Extremely important nominalist. Many influential students.
c. 1295–1349	Thomas Bradwardine. Mertonian. Author of an *Insolubilia* and other works.
c. 1298–1358	Adam Wodeham. Ockham’s one-time personal secretary. “Originator” of the theory of *complexe significabilia*. Very important in the transmission of English ideas to France.
c. 1300–1358	Gregory of Rimini. Theory of *complexe significabilia*.
early 14th c.–d. 1361	Richard Kilvington. Mertonian, author of important *Sophismata*.
fl. before 1335–d. c. 1365	Roger Swyneshed (= Swineshead). Mertonian, author of *Insolubilia* and *Obligationes*.
Before 1313–d. 1372/3	William Heytesbury. Mertonian, author of *De sensu composito et diviso*, *Sophismata*, *Regulae solvendi sophismata*.
1335	Probable date of Buridan’s *Consequentiae*. Date of Heytesbury’s *Regulae solvendi sophismata*.

fl. 1340–1342	William of Crathorn
fl. mid-14th c.	Richard Billingham. Mertonian, author of *Speculum puerorum*.
fl. 1357	Henry Hopton. Author of a treatise *On the Truth and Falsehood of a Proposition*, falsely attributed to Heytesbury.
fl. sometime between 1335–1370	Robert Fland. Three short logical texts.
d. 1390	Albert of Saxony. Pupil of Buridan's. Author of *Sophismata* and *Perutilis logica*.
c. 1330–1396	Marsilius of Inghen. Pupil of Buridan's.
fl. 1360s	John of Holland. Author of logical treatises. Master and Dean of Faculty of Arts at Prague.
fl. 1360s–d. 1399 or after	Richard Lavenham. Derivative author of many logical writings.
fl. 1360s	Ralph Strode. Author of a *Logica*, parts of which were used in later universities.
c. 1350–1419	Vincent Ferrer. Of the more or less Thomist persuasion.
1350–1420/1	Peter of Ailly. Wrote *Concepts and Insolubles* (1372).
fl. 1387–1400	Peter of Mantua. Early source for English logic in Italy. Author of a *Logica*.
fl. 1395–1402	Angelo of Fossombrone. Author of *Insolubilia* showing influence of Heytesbury.
1369–1429	Paul of Venice. Studied in Oxford 1390–c. 1393. Very important in transmission of English logic to Italy. Author of *Logica parva* and perhaps of *Logica magna*.
d. 1451/1455	Paul of Pergula. Student of Paul of Venice. Wrote a *Logica* and a *De sensu composito et diviso*.

1387–1465	Cajetan (= Gaetano) of Thiene. Student of Paul of Venice. Commented on Heytesbury and other English authors.
d. 1446	Battista da Fabriano. Later Italian author.
1400–1464	George Scholarius. Greek translator of Peter of Spain's *Summulae logicales*.
d. 1486	Alexander Sermoneta. Italian author, commentator.

Appendix 2: A Collection of Texts

The following is a compilation of primary texts frequently quoted or cited in the above pages. The idea was to gather them here so that you would not have to keep little markers at various places in the above chapters and keep flipping back and forth to find texts that are discussed in several places. This way you only have to keep one such marker. I have also included several passages that were just too long or for some other reason could not be included gracefully in the chapter where they are discussed. The texts are arranged here in more or less chronological order. All translations are my own, and were made especially for this volume. Where the Latin is not readily available for you to look up for yourselves, I have included it in the notes.

(1) Aristotle, *Categories* 1, $1^{a}12$–15: Whatever get from something the names by which they are called, but differ in ending, are called "paronyms." For example, a grammarian [is so called] from grammar, and a brave [person is so called] from bravery.

(2) Aristotle, *Categories* 10, $12^{b}6$–15: Neither is what grounds negation and affirmation [itself] negation and affirmation. For an affirmation is an affirmative proposition, and a negation is a negative proposition. But none of what ground negation and affirmation is a proposition. These [grounds] are nevertheless said to be opposed to one another as affirmation and negation are. For it is the same kind of opposition in these cases too. For just as affirmation is opposed to negation — for example, 'He is sitting' [is opposed] to 'He is not sitting' — so too the thing underlying each one is opposed [to the thing underlying the other], sitting [is opposed] to not sitting.

(3) Aristotle, *De interpretatione* 1, $16^{a}3$–8: Therefore, things in speech are symbols of passions in the soul, and things written [are symbols] of those that are in speech. And just as letters are not the same for all [people], neither are utterances the same. But the things of which these [utterances] are primarily signs are the same for all [people, namely] passions of the soul. And what the latter are likenesses of — [namely,] real things — are also the same.

(4) Aristotle, *De interpretatione* 3, $16^{b}19$–21: Therefore, verbs spoken by themselves are names, and signify something. For the speaker halts his thinking and the listener pauses.

(5) Augustine, *On the Customs of the Catholic Church* I.4, 6[1]: Therefore, let us ask what is better than man. That of course will be hard to find out, unless we first consider and discuss what man himself is. I do not think a *definition* of man is now demanded of me. What seems to be asked of me at this point is rather the following: since there is almost universal consensus — or at least it is agreed on between me and those I am now dealing with, and that suffices — that we are put together out of soul and body, what [then] is the man himself? Is he both of the things I [just] mentioned, or the body alone, or the soul alone?

For although soul and body are two things, and neither would be called a "man" if the other did not exist (for neither would the body be a man if the soul did not exist, nor in turn would the soul be a man if a body were not animated by it), nevertheless it can happen that one of these should be regarded as the "man" and called [such].

Therefore, what do we call the "man"? [Is he] soul *and* body, like a "team" [of horses] or a centaur[2]? [Is he] the body alone, which is being *used* by a soul that rules it, like a "lantern," [which is] not the flame and the container together but only the container, although we *call* it [a lantern] because of the flame? [Or] do we call nothing but the soul the "man," but *on account of* the body it rules, just as we call a "rider" not the horse and the man together but only the man, yet [only] insofar as he is suited to governing the horse?

It is hard to decide this issue. Or if it is easy to figure out, [in any case] it requires a long explanation. We do not have to accept and take on that job and delay [here]. For whether both, or only the soul, takes the name 'man', the best thing for the man is not what is best for the body. Rather what is best for the soul and body together, or for the soul alone, that is best for the man.

(6) Augustine, *De trinitate* XV.10.19: Thus whoever is able to understand the word, not only before it sounds but also before the images of its sounds are pondered in thought — for this is what pertains to no language (namely, one of those that are called national languages, of which ours is Latin) …

(7) Augustine, *De trinitate* XV.11.20: Consequently, the word that sounds outwardly is a sign of the word that shines within.

(8) Augustine, *On the City of God* XIX.3[3]: Now [Varro] tries to convince [us] which of these three is true and ought to be followed, as follows: First, since in philosophy the highest good, not of a tree, not of cattle, not of God, but of man is sought for, he thinks one must ask *what is man himself*. He feels there are two [factors] in [man's] nature: body and soul. And he does not doubt at all that of these two the soul is the better and much the more preeminent. Rather [what he doubts is] whether **(1)** the soul alone is the man, in such a way that the body is to

[1] Augustine, *De moribus ecclesiae catholicae* I.4.6, in Migne, PL 32, col. 1313.

[2] The point seems to depend on the rather odd view that a centaur is not half horse and half man, but rather a combination of a complete horse and a complete man.

[3] Augustine, *De civitate dei* XIX.3.1–24.

him as the horse to the rider.[4] For the rider is not the man *and* the horse, but is only the man. Nevertheless, he is *called* a "rider" because he is somehow related to the horse. Or **(2)** is the man the body alone, somehow related to the soul, like the cup to the drink? For the chalice *and* the drink the chalice contains are not together called the "cup," but only the chalice, yet [only] because it is adapted to containing the drink.[5] Or finally **(3)** is neither the soul alone nor the body alone the man, but both together, [in such a way that] the soul or the body is one part of him, but he as a whole consists of *both* in order to be a man? Thus we call two conjoined horses a "team." Either the right one of them or the left one is a part of the team. But we do not call [either] one of them [alone] the "team," no matter how it is related to the other, but [only] both together. [Varro] chooses the third of these three [alternatives] and supposes that man is neither the soul alone nor the body alone, but the soul and the body together. Hence the highest good of man, by which he is made happy, he says consists of the goods of *both* things, that is, of the soul and of the body.

(9) Boethius, his translation of Text **(3)**[6]: Therefore, things in speech are marks of passions in the soul, and things written [are marks] of those that are in speech. And just as letters are not the same for all [people], neither are utterances the same. But the things of which these [utterances] are primarily marks are the same for all [people, namely] passions of the soul. And what the latter are likenesses of — [namely,] real things — are also the same.

(10) Boethius, his translation of Text **(4)**[7]: Indeed verbs, when uttered by themselves, are names and signify something. For he who says [a verb] establishes an understanding, and he who hears it rests.

(11) Boethius, *First Commentary on De interpretatione*[8]: Now the whole reasoning has the following sense. There are three things out of which every conversation and argument is made complete: real things, understandings, utterances. Real things are what we perceive by the mind's reason and distinguish by an understanding. Understandings, on the other hand, [are] that by means of which we learn about the things themselves, while utterances [are] that by means of which we signify what we grasp by an understanding.

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[4] 'rider' = *'eques'* = 'horseman'. In Latin, *'eques'* is etymologically related to 'horse' = *'equus',* but does not have the word 'man' built into it as 'horseman' does in English. Hence I prefer to translate it as 'rider' for the sake of the point the passage is making.

[5] Like 'horse' = *'equus'* and 'rider' = *'eques',* 'cup' = *'poculus'* and 'drink' = *'potio'* are etymologically related in Latin.

[6] Boethius, *Commentarii in librum Aristotelis Περὶ ἑρμηνείας,* Meiser ed., I, p. 3.5–11.

[7] Boethius, *Commentarii in librum Aristotelis Περὶ ἑρμηνείας,* Meiser ed., I, p. 5.5–7.

[8] Boethius, *Commentarii in librum Aristotelis Περὶ ἑρμηνείας,* Meiser, ed., I, p. 37.4–22 (on *De interpretatione* 1, 16^{a}3–8). There is a similar passage in the second commentary, II, p. 20.12–31.

But besides these three, there is another kind of thing, which signifies utterances. These are letters. For the writing down of these [letters] is a signifying. Since therefore these things are four — the real thing, the understanding, the utterance, the letter — the understanding conceives the real thing, utterances designate the understanding, but letters signify those utterances.

Now an understanding of the soul is a kind of passion. For unless someone suffers in his soul's reason a certain likeness of the thing that he understands, there is no understanding. For when I see a globe or a square, I conceive its shape in my mind, and a likeness of it is formed for me, and [my] soul suffers a likeness of the understood thing. Thus, it becomes an understanding, and is a likeness of the thing and a passion of the soul.

(12) Boethius, *First Commentary on De interpretatione*[9]: "And just as letters are not the same for all [people], so neither are the utterances the same."[10] This suffices to show that utterances and letters are established by "position,"[11] not by nature. In fact, utterances and letters are different among different people. And just as the same letters are not found among all men, so too neither are [the same] utterances. Hence these are according to "position," about which [Aristotle] says nothing, as it if were plain. For it is manifest that what is changed by individual nations cannot be established by nature, but rather by "position."

Now what he added — "But the first things of which these [utterances] are the marks are the same for all [people, namely] passions of the soul. And what the latter are likenesses of — [namely,] real things — are also the same"[12] — this serves to make clear that the real things and the understandings are natural. For the "passions of the soul" and the "likenesses of things" are the same thing, as has been said. Therefore, now he says, "what the latter" (that is, utterances, about which he had said above, "so neither are the utterances the same"), the things therefore of which these utterances are significative (that is, the passions of the soul), "are the same for all people."

Now utterances signify the things that are in the understandings. Therefore, an understanding is a passion of the mind, not differing among all men. Therefore, the conception of the mind and passion of the soul is natural among all men, and what are counted as utterances are the marks of them.

But we are told that the things of which the understandings and passions of the soul are likenesses are not established by "position," but rather naturally, for the reason that those things, the likenesses of which are understandings, which understandings are passions of the soul, are the same for all people.

(13) Boethius, *Second Commentary on De interpretatione*[13]: For Aristotle does not think the subject things are [what are] signified by names and verbs, and

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[9] *Ed. cit.*, I, p. 39.2–40.7.

[10] This is the "lemma," the quotation being commented on. For the context, see Boethius' translation of *De interpretatione*, 1, 16[a]3–8, in Text **(9)**.

[11] Boethius' term for what other authors called "imposition" or "institution." Etymologically, 'position' = a "setting up," a "positing."

[12] See Boethius' translation of *De interpretatione*, 1, 16[a]3–8, in Text **(9)** above.

[13] *Ed. cit.*, II, p. 27.10–29.16.

neither are sense impressions or fantasy images. That names and verbs are not utterances significative of sense impressions he makes clear in his work on justice, where he says, "φύσει γὰρ εὐθὺς διήρηται τά τε νοήματα καὶ τὰ αἰσθήματα,"[14] which can be translated into English[15] as "For understandings and sensations are by nature immediately divided [from one another]." Therefore, he thinks a sensation is something different from an understanding.

But he[16] who says that passions of the soul are signified by utterances is not talking about sensations. For sensations are passions of the body, [not of the soul]. Therefore, if he had said that passions of the *body* are signified in this way by utterances, then we would rightly understand [that he meant] sensations. But because he stated that names and verbs signify passions of the *soul*, he must be supposed to mean, not sensations, but rather understandings.

Now because a fantasy image is also a thing in the soul, someone might doubt whether perhaps 'passions of the soul' means fantasy images, which the Greeks call φαντασίας. But he quite correctly and painstakingly distinguishes these [two kinds of things] in his books *On the Soul*, where he says[17]:

> ἔτιν δὲ φαντασία ἕτερον φάσεως καὶ ἀποφάσεως; συμπλοχὴ γὰρ νοημάτων ἐστὶν τὸ ἀληθὲς καὶ τὸ ψεῦδος. τὰ δὲ πρῶτα νοήματα τί διοίσει τοῦ μὴ φαντάματα εἶναι; ἢ οὐδὲ ταῦτα φαντάματα, ἀλλ᾽ οὐχ ἄνευ φαντασμάτων.

which we translate as:

> Now a fantasy image is different from an affirmation and a negation. For truth and falsehood[18] is[19] a putting together of understandings. But how will primary understandings be different, so that they are not fantasy images? Or rather, [is it not the case that] they certainly are not fantasy images, but they do not occur without fantasy images?

This statement shows that fantasy images are one thing, understandings are another. Indeed, affirmations and negations come about from the putting together of understandings.

Therefore, he raised this doubt too[20]: Are primary understandings a kind of fantasy images? Now we call "primary understandings" the ones that conceive

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[14] Meiser's edition refers to Aristotle, *Nichomachean Ethics*, VIII, 12 (not 11, as Meiser says), 1162ª22. But the text there is not about the objects of intellect and sense at all, but instead about differences between men and women: "εὐθὺς γὰρ διήρηται τά ἔργα καὶ ἔστιν ἕτερα ἀνδρὸς καὶ γυναικός."

[15] Boethius, of course, says "Latin."

[16] Namely, Aristotle. See *De interpretatione* 1, 16ª3–8, and Text **(11)** above.

[17] Aristotle, *De anima* III, 8, 432ª10–14.

[18] Which apply only to affirmations and negations.

[19] Boethius has the singular here, despite the compound subject.

[20] In the penultimate sentence of the above quotation.

a simple thing — for instance, if someone says only 'Socrates' and wonders whether such an understanding,[21] which contains in itself nothing of the true or the false, is an understanding [of Socrates] or a fantasy image of Socrates. But in this case too he clearly shows what would seem [to be the answer]. For he says, "Or rather [is it not the case that] they certainly are not fantasy images, but they do not occur without fantasy images?" That is, what the word 'Socrates', or [any] other simple [word], signifies is not a fantasy image but rather an understanding, which understanding cannot come about without a fantasy image.

For sense impressions and fantasy images are certain primary shapes on which the intelligence leans, being superimposed on them as on a kind of foundation. Just as painters are wont to sketch a body in outline as a foundation when they express the features of anything in colors, so [too] the sense impression and fantasy image are a foundation in the case of the soul's perceiving. For when some thing falls under a sense [faculty] or under thought, there must first be born a certain fantasy image of it, and then a fuller understanding supervenes that explicates all [the object's] parts that were confusedly taken for granted by the fantasy image.

Therefore, a fantasy image is something imperfect. But names and verbs do not signify any broken-off things, but rather complete[22] ones. Hence Aristotle's correct view is: Whatever are counted as verbs and names, they do not signify sense impressions or fantasy images, but only the quality of understandings.

(14) Boethius, *Second Commentary on De interpretatione*[23]: Hence the Peripatetics, who come from Aristotle, were absolutely correct to claim that there are three kinds of discourse, one that can be written with the elements [of writing],[24] another that can be pronounced by the voice, and a third that can be linked together in thought. One is contained in understandings, the other in speech, and the third in letters.

(15) Boethius, *Second Commentary on De interpretatione*[25]: It was said that for the Peripatetics there are three kinds of discourse, one that is written with letters, another that is pronounced by the voice, and a third kind that is joined together in the mind. Now if there are three kinds of discourse, no doubt the parts of speech are of three kinds too. Hence, because the verb and the name are the principal parts of speech, there will be one kind of verbs and names that will be written, another kind that will be spoken, and another, silent kind that will be treated by the mind.

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[21] That is, the understanding expressed by the utterance.

[22] 'complete' = *perfecta*. The contrast here is between fantasy images, which are "imperfect" or "cut off" (and so "incomplete"), and understandings, which are "perfect" (that is, "complete").

[23] *Ed. cit*., II, p. 29.16–21.

[24] That is, the letters of the alphabet.

[25] Ed. cit., II, p. 30.3–10.

(16) Boethius, from *On the Differences in the Topics*[26]: A proposition is an expression signifying the true or the false.

(17) Anselm, *De grammatico*, §§ 4.231–4.2341[27]: Surely the name 'man' signifies *per se* and as one the [things] of which the whole man consists. Among these, substance stands in the first place, because it is the cause of the others and has them, not as needing them but [them] as needing it. For there is no difference[28] of substance [such that] substance cannot be found without it, [but] none of its differences can exist without [substance]. Hence, even though all these [things] together, as a single whole, are called[29] "man" by one name under one signification, nevertheless [this occurs] in such a way that the name is principally significative and appellative of substance. As a result, although it is correct to say a substance is a man, and man is a substance, yet no one says rationality is a man, or man is rationality. Rather [we say man] *has* rationality.

But *'grammaticus'* does not signify man and grammar[30] as one. Rather it signifies grammar *per se* and man *per aliud*. The name [*'grammaticus'*], even though it is appellative of man, nevertheless cannot properly be called significative of him; and although it is significative of grammar, nevertheless it is not appellative of it. I am now calling an "appellative name" of any thing [that] by which the thing itself is appellated [= called] in common usage. For [there is] no common usage by which it is said that grammar is *grammaticus,* or a *grammaticus* is grammar. Rather, a *man* is *grammaticus*, and a *grammaticus* a man.

(18) Anselm, *De grammatico*, § 4.2413[31]: **M** If *man* is [contained] in *grammaticus,* it is not predicated together with [*grammaticus*] of anything, just as *animal* is not predicated [together] with *man* because it is contained in *man*. For it is not correct to say Socrates is a man-animal.

D That cannot be contradicted.

M But it is well-formed to say Socrates is a *grammaticus* man.[32]

D [Yes, that is] well-formed.

M Therefore, *man* is not in *grammaticus*.

D I see that that follows.

(19) Anselm, *De grammatico*, §§ 4.4210–4.4234[33]: **M** If there is a white horse confined in some house without your knowledge, and someone asks you "Is there is a white[34] in that house?," do you thereby know there is a horse there?

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[26] Boethius, *De differentiis topicis*, col. 1174B. See Stump trans., p. 30.

[27] Henry, *The De Grammatico of St. Anselm*, pp. 36–37. The "Master" in the dialogue is speaking.

[28] The reference is to the traditional method of definition by genus + difference. Here the genus is substance.

[29] called = *"appellentur."*

[30] Correcting Henry's *'grammaticum'* to *'grammaticam'* in accordance with the Schmitt edition of Anselm's *Opera omnia*, vol. 1, p. 157.2.

[31] Henry, *The De Grammatico of St. Anselm*, p. 38. **M** = the "Master" in the dialogue; **D** = the "Disciple."

[32] '*Grammaticus*' is here used as an adjective, a perfectly normal usage.

[33] *Ibid*., pp. 40–41. Again, **M** = the "Master" in the dialogue; **D** = the "Disciple."

D No. For whether 'white' means whiteness or what whiteness is in, I do not conceive in my mind the being of any definite thing but this color.

M Even if you do understand something besides this color, nevertheless it is certain that you do not understand *through this name* the being of what the color itself is in.

D Certainly. For even if a body or a surface occurs to the mind, which only happens because I have experienced that whiteness is likely to be in [bodies and surfaces], nevertheless the name 'white' itself does not signify any of these [things], as was shown for *'grammaticus'*. But I am still waiting for you to show [how[35]] it does signify.

M What if you see a white horse and a black ox standing next to one another, and someone says of the horse "Strike it!," without showing by any sign which one he is talking about? Do you know he is talking about the horse?

D No.

M But if he replies to you "The white"[36] when you do not know and ask "Which one?," do you understand which he is talking about?

D I understand the horse by the name 'white'.

M So the name 'white' signifies the horse to you.

D It does [so] signify.

M Do you not see that [it does this] in a way other than the name 'horse' [does]?

D I do see. Surely the name 'horse', even before I know the horse is white, signifies to me by itself (*per se*), and not through [anything] else (*per aliud*), the substance of the horse. But the name 'white' does not signify [it] by itself (*per se*), but rather through [something] else (*per aliud*) — that is, through the fact that I know the horse is white. For since the name 'white' does not signify anything else than does the expression 'having whiteness', [therefore] just as the expression by itself (*per se*) establishes an understanding[37] of whiteness for me, and not of the thing that has whiteness, so does the name. But because I know whiteness is in the horse, and [I know this] through [something] other (*per aliud*) than through the name 'white' — say, by [the sense of] sight) — [therefore] I understand the horse through the fact that I know whiteness is in the horse, that is, through [something] other (*per aliud*) than through the name 'white'. Yet the horse is called (*appellatur*) by that [name].

M So do you see how 'white' is *not* significative of what it does somehow signify, and how it is appellative of what it is not significative of?

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[34] white = *"albus sive album."* Anselm gives both the masculine and neuter forms to lend a certain additional ambiguity to the question.

[35] how: The Latin is *'quia'*, which in Anselm's Latin would normally be translated in such a context "to show *that* it signifies." But that is not in fact what is going on.

[36] English virtually requires one to say "the white *one*" here, but Latin does not require a noun. And since that is the whole point of Anselm's discussion here, I have translated with a bare adjective.

[37] establishes an understanding: *constituit ... intellectum*. See Ch. 3, p. 63, above, on this phrase.

D I see that too. For it [both] signifies and does not signify the horse. For it does not by itself (*per se*) signify it, but through [something] else (*per aliud*). And yet the horse is called (*appellatur*) white.

(20) Peter of Spain, *Summulae logicales*, Tract. I[38]: Therefore a *sound* is whatever is properly perceived by hearing. I say 'properly', because even if a man or a bell is heard, this does not occur except through *sound*. Among sounds, one kind is an *utterance*, another kind is a *non-utterance*.

An *utterance* is a sound brought forth by the mouth of an animal, [and] formed by natural instruments. The instruments by which an utterance is formed are called *natural* [instruments, namely]: lips, teeth, tongue, palate, throat and lungs.

A *non-utterance sound* is one that is generated by the collision of inanimate bodies. For example, the breaking of trees, the stamping of feet.

Among utterances, some are *significative*, others are *non-significative*. A significative utterance is one that represents something to hearing. For example, 'man', or the groans of the sick. A non-significative utterance is one that represents nothing to hearing. For example, 'buba'.[39] Among significative utterances, one kind is significative *by convention*, another kind [is significative] *naturally*.

A naturally significative utterance is one that represents the same thing to all men. For example, the groans of the sick, the barking of dogs.

A conventionally significative utterance is one that represents something according to the will of the institutor. For example, 'man'. Among conventionally significative utterances, one kind is *simple* or *incomplex*. For example, the name[40] and the verb. Another kind [is] *composite* or *complex*. For example, an expression.[41]

(21) Peter of Spain, *Summulae logicales*, Tract VI[42]: One kind of accidental supposition is simple and another kind is personal. Simple supposition is the taking of a common term for the universal thing signified by it. For instance, when 'Man is a species' or 'Animal is a genus' is said, the term 'man' supposits for man in general and not for any of its inferiors, and the term 'animal' [supposits] for animal in general and not for any of its inferiors. And likewise for any other common term. For example, 'Risible is a property', 'Rational is a difference', 'White is an accident'.

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[38] Translated from Peter of Spain, *Tractatus* (= *Summulae logicales*), De Rijk, ed., Trans. I.2–3, pp. 1–2. Compare the translation in Peter of Spain, *Language in Dispute*, pp. 1–2.

[39] This is supposed to be a pair of nonsense syllables. Unfortunately, 'buba' can mean "swellings" in late Latin, as for example the swellings that came with "bubonic" plague. Sometimes authors will give 'bu ba blitrix' as their example instead. It really *doesn't* mean anything, in Latin any more than in English.

[40] name = *nomen*. In mediaeval grammatical theory, "names" included more than we call nouns. They also included adjectives.

[41] expression = *oratio*. This is meant to include any word-group.

[42] De Rijk ed., Trans. VI, § 5, p. 81.11–18. Compare Dinneen trans., p. 70.

(22) Peter of Spain, *Summulae logicales*, Tract VI[43]: Personal supposition is the taking of a common term for its inferiors. For instance, when 'Man runs' is said, the term 'man' supposits for its inferiors.

(23) Peter of Spain, *Summulae logicales,* Tract IX[44]: Ampliation is the extension of a common term from a lesser supposition to a greater one. For instance, if one says 'A man is able to be Antichrist', the term 'man' supposits not only for the [people] who exist, but for those who *will* exist. Hence it is ampliated to future [men]. Now I say 'a common term' because a discrete term like 'Socrates' is neither restricted nor ampliated.

(24) Lambert of Auxerre, *Logica*[45]: One kind of accidental supposition is simple and another kind is personal. Simple supposition is that according to which a term is taken for itself or for its thing, without having any relation to the supposita contained under it. Now the supposition is called "simple" because it is in a term by reason of its form. And because the form is of itself simple and indivisible, therefore the supposition that is in a term from its form is called "simple." That form is simple and indivisible may be gathered from the book *Six Principles*.[46] But note that *not to have a relation to supposita* may be such that there is in no way a relation to them, either determinately or indeterminately, or such that it can be said that there is no relation to them determinately but rather indeterminately. In accordance with this, it can be said that there is one kind of simple supposition in which a term in no way refers to supposita but is only taken for its form. This kind the term 'man' has when 'Man is a species' is said. And this is properly simple supposition. But there is another kind of simple supposition in which a common term does not refer to its supposita determinately, but yet has a relation to them indeterminately. This supposition the term 'man' has when 'I know there is a man in England' is said. Likewise, 'pepper' when 'Pepper is sold here and in Rome' is said. For this is less properly called simple supposition that is the first kind. Personal supposition is that according to which a term is taken for its suppositum or for its supposita.

(25) Lambert of Auxerre, *Logica*[47]: Determinate [supposition] is what a common term has when it can be taken indifferently for one thing or for several, as when one says 'A man runs'. In this case 'man' has determinate supposition. For it is true when one man runs or several. Now it is called "determinate" because for the truth of a proposition in which[48] there occurs a common term having such supposition, it suffices that the common term be taken of necessity for some

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[43] De Rijk ed., Trans. VI, § 7, p. 82.10–12. Compare Dinneen trans., p. 71.

[44] De Rijk ed., Trans. IX, § 2, p. 194. Compare Dinneen trans., p. 172.

[45] Alessio ed., p. 209. Compare Kretzmann and Stump, *The Cambridge Translations of Medieval Philosophical Texts,* vol. 1, p. 110.

[46] The pseudo-Aristotelian *Liber de sex principiis* (= *Book of Six Principles*), which discusses the six categories about which Aristotle says relatively little in his genuine *Categories.* Don't worry about it.

[47] Alessio ed., pp. 210–211. Compare Kretzmann and Stump, *The Cambridge Translations of Medieval Philosophical Texts,* vol. 1, pp. 111–112.

[48] Conjecturing *'qua'* for the edition's *'una'*.

suppositum. Neither is it required that it be taken of necessity for several, although it is *able* to be taken in such supposition for several. Therefore, it is necessary that a common term in such supposition be taken for one thing determinately. If [it is taken] for several, that is accidental. Confused [supposition] is what a common term has when of necessity it is taken for all its supposita or for several. Now it is called 'confused' from the multitude of the supposita for which a term having such supposition is taken. For where there is multitude, there there is confusion. One kind of confused supposition is strong [and] mobile, another is weak [and] immobile. The strong [and] mobile kind is what a common term has when it is taken of necessity for all its supposita, and a descent can be made under it … Weak [and] immobile [supposition] is what a common term has when of necessity it is taken for several supposita contained under it, yet not for all. Neither can a descent be made under it.

(26) Lambert of Auxerre, *Logica*[49]: Ampliation is the extension of the range of a common term insofar as the common term can be taken for more supposita than its actual supposition requires. This is clear when one says 'A man is able to be Antichrist'. 'Man' is ampliated by 'is able'. For although 'man', supposing with respect to a present-tensed verb, by its actual supposition is taken for present [men], nevertheless through the nature of the verb 'is able', 'man' is ampliated so that it is taken for the future. And so its supposition is extended.

(27) William of Sherwood, *Introduction to Logic*, from Ch. 5[50]: Now signification is the presentation of the form of something to the intellect.

(28) William of Sherwood, *Introduction to Logic*, from Ch. 5[51]: [Formal supposition] is divided as follows: one kind is simple, another personal. It is simple when a word supposits its significate *for* its significate.[52] For example, 'Man is a species'. But [formal supposition is] personal when it supposits its significate not *for* [its] significate but *for* a thing that is under it. For instance, 'Man runs'.[53] For running inheres in man in virtue of some singular.

(29) William of Sherwood, *Introduction to Logic*, from Ch. 5[54]: It must be said that such statements, where a verb in the past or future tense is predicated, are twofold. For example, 'A man ran'. For the statement can be said [as] com-

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[49] Alessio ed., p. 228. Compare Kretzmann and Stump, *The Cambridge Translations of Medieval Philosophical Texts,* vol. 1, pp. 137–138.

[50] Lohr ed., § 5.0.1, p. 265.8–9 (= Grabmann ed., p. 74.16–17). See Kretzmann trans., p. 105.

[51] Lohr ed., § 5.1.3, p. 266.11–15 (= Grabmann ed., p. 75.14–18). See Kretzmann trans., p. 107.

[52] The construction '*supponere*' + the accusative is unusual but not unique. The more common construction, and the universal one in the fourteenth century, has '*supponere*' + a '*pro*'-clause (= "supposits for," "refers to"). Here Sherwood combines *both* constructions. For speculation about the sense, see Kretzmann trans., p. 107 n. 16.

[53] Latin has no indefinite article. So this proposition can be read quite naturally as "A man runs."

[54] Lohr ed., § 5.3.5, pp. 273.82–274.97 (= Grabmann ed., p. 84.14–30). See Kretzmann trans., pp. 126–128.

posite or divided. If [it is] composite, then it should be uttered continuously, and the continuity of the subject with the predicate signifies that [the subject's] supposition should be discerned from the predicate. Accordingly, 'man' supposits for past [men] and not for present ones (except insofar as they are past). If [the proposition is said as] divided, then it should be uttered discontinuously as follows: "A man, runs." And the discontinuity of the expression signifies that the [subject's] supposition is not discerned from the predicate. The rule is to be understood in this sense.

Thus it does not follow: "[Something] white was seen by Socrates; therefore, Socrates saw [something] white. For example, if a shield is white now, but was black when it was seen by Socrates. I say [this] does not follow if the antecedent is divided. But it does follow if [the antecedent] is composite.

We have to understand [the situation] in this way too for a verb about the future, that is, that a common term in the earlier part [of the proposition][55] supposits for present [things] or future ones by composition and division. In the later part,[56] however, [it supposits] only for future ones.

(30) Roger Bacon, *Summulae dialectices*[57]: One kind of supposition is simple, another personal. Simple supposition occurs when a term does not stand for another person[58] or for some inferior, but for an utterance (for example, 'Man is an utterance'), for [its] significate (for example, 'Man is the worthiest of creatures'), for a significant utterance (for example, 'Man is a name'), for some property of an utterance (for example, 'Man is a monosyllable', 'Man is a trochaic foot',[59] or, as far as the properties of the significate are concerned, [for one of those] (for example, 'Man is a universal', 'Man is a species'), and many other things like that.

Augustine plainly demonstrates at the end of his *Dialectic*[60] that a name can be so taken in different ways, and in many other ways. We shall treat this later.

Personal supposition occurs when a term supposits for individuals and for its inferiors (for example, 'A man runs', 'A man argues'.

(31) John Duns Scotus, *Questions on the First Book of the De interpretatione*, q. 2[61]: *Does a name signify a real thing or a species in the soul?*[62] … That

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[55] That is, in subject position.

[56] In predicate position.

[57] Roger Bacon, *Summulae dialectices,* Libera ed., p. 266, §§ (420)–(422); Steele ed., p. 269.

[58] I am not sure of the exact sense of the word here, but it probably connected with the notions of personal supposition and of grammatical "person."

[59] In Latin meter, a trochee is a metrical foot made up of a long syllable followed by a short one. The Latin word *'homo'* (= man) is such a trochee.

[60] Augustine, *De dialectica,* Pinborg ed., pp. 112–114.

[61] John Duns Scotus, *In primum librum Perihermenias quaestiones*, in his *Opera omnia*, q. 2, Wadding ed., vol. 1, pp. 186–187.

[62] This is the statement of q. 2.

it signifies a species is seen here in the text,[63] "The things in speech are marks" — that is, signs — "of passions in the soul." Those passions are not real things, because real things are not in the soul[64] …

To the contrary, further down in the first part of the *De interpretatione*,[65] at the end of the chapter on the verb, in the sixth text,[66] Aristotle says that a verb signifies something: "For he who utters them establishes an understanding." From this it follows that to signify is to establish an understanding of something. Therefore, that is signified an understanding of which is established by the utterance. But when an utterance is pronounced, an understanding of the species is not established, but rather [an understanding] of the real thing, as is clear in the case of anyone hearing a significative utterance …

To the question, it is said that the intelligible species is immediately signified by the utterance, but it is considered in two ways: either insofar as it is an accidental something in itself, namely, informing the soul, or insofar as it represents a real thing. In the first way, it is not signified by the utterance, for the reason given to the contrary. But in the second way, it is. For since every sign insofar as it is a sign is a sign of the signed, it follows that an utterance signifying a likeness insofar as it is a sign of a real thing signifies the real thing itself — but mediately, because, that is, it immediately signifies what is the sign of the real thing, insofar as it is a sign.

(32) John Duns Scotus, *Second Work on the De interpretatione*, q. 1[67]: We must say, as Aristotle says here in Chapter 1,[68] that a name first signifies passions of the soul, that is, conceptions of the understanding. As evidence for this, we must know that there are three things related in order: **(a)** The first is the intelligible species, according as it is in act, as first act in its proper nature[69] … **(b)** The second is that the notion[70] of a thing is the *what it was to be*,[71] which is set before the intellective power, insofar as it is an act that is the intelligible species, according to which act the knowing power is brought to the *what it is* of the

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[63] Aristotle, *De interpretatione* 1, 16^{a}3–8, Boethius trans., in Text **(9)**.

[64] At least not the kinds of real things we are talking about here.

[65] The Latin here says "*Posterior Analytics*," which is obviously wrong. See Boethius' translation of *De interpretatione* 3, 16^{b}19–21, Text **(10)**, the second sentence.

[66] This is an appeal to a common mediaeval way of dividing up the text, much as we today divide it up into chapters.

[67] John Duns Scotus, *Opus secundum*, q. 1, in his *Opera omnia*, Wadding ed., vol. 1, pp. 212–213. The passage is very dense and involves a lot of technical vocabulary. But note the first sentence and the conclusion drawn in the last sentence of the passage.

[68] That is, *De interpretatione* 1, 16^{a}3–8, Boethius trans., in Text **(9)**.

[69] All this in effect just means an occurrent concept, as distinguished from a habitual or dispositional one.

[70] notion = *ratio*, a notoriously difficult word to translate. Do not read it here in too psychological a sense. Here it means roughly the *essential* aspects of the thing. (See n. 71 below.)

[71] That is, the "τὸ τί ἦν εἶναι," one of Aristotle's phrases for the essence of a thing.

thing.[72] **(c)** The third is the thing existing as a particular, under individuating conditions. The first [alternative, **(a)**,] is not signified first by an utterance, because *what a thing is* is first understood, *before* the species of the thing is understood. And what is first understood is first signified. The assumption[73] is clear, because the understanding does not understand intelligible species except by reflection, as [by] its act.[74] But the third [alternative, **(c)**], that is, the things existing as individuals under their own notions, cannot be first signified,[75] because the understanding is in first act through its proper object, which is the *what it is* of a thing; the understanding does not understand the singular first.[76] But it can consider *what the thing is* without material conditions, even though [the thing] does not exist without them. And a name is imposed on [a thing] just as it is understood. Hence a name signifies a passion of the understanding, that is, the thing as conceived.[77]

(33) John Duns Scotus, *Ordinatio* I, d. 27, q. 1, obj. 2 and reply[78]: Again, Augustine in the fifteenth book of *On the Trinity*, Ch. 11 or 26[79]: "the word that sounds outwardly is a sign of the word that shines within." But the exterior word is a sign of a real thing, and not of an act of understanding. Otherwise, any affirmative [proposition] in which the same thing is not predicated of itself would be false, because the act of understanding the subject is not the act of understanding the predicate, even though the one reality is the other.…

To the second argument,[80] although there is a great debate about the utterance, whether it is a sign of the real thing or of the concept, nevertheless briefly I grant that what is signified by an utterance is properly the real thing. Nevertheless the letter, the utterance and the concept are signs ordered to the same significate, just as there are many effects ordered to the same cause, none of which is a cause of another, as is clear in the case of the sun illuminating the several parts of the medium.[81] And where there is such an order among things caused without the one's being a cause of another, any one of them is "immediate" with respect to

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[72] That is, the "τὸ τί ἐστιν," another Aristotelian phrase. Note: In this sentence I am violating the first cardinal rule of translating: *Never translate a text you do not thoroughly understand*.

[73] That is, the premise that "*what a thing is* is first understood …," etc.

[74] I am not sure what the last clause is doing here.

[75] Reading '*significari*' in the text.

[76] Scotus has a theory according to which we acquire knowledge of individuals only derivatively; the intellect first knows "common natures" (= loosely speaking, "universals"). Hence, he is arguing here, individuals cannot be what is immediately ("first") signified by names.

[77] Not all of the difficulties in this passage are problems of translation. The text is just plain obscure. I did the best I could. The upshot is that Scotus is here interpreting Aristotle's phrase 'passion of the soul' as referring to the essential nature of a thing. It is not individual, but neither is it a *concept* in the sense of a psychological entity that can be known only by reflection.

[78] From his *Opera omnia*, Vatican edition, vol. 6, pp. 63–64 (§ 2) and p. 97 (§ 83).

[79] Text **(7)**. The odd phrase 'Ch. 11 or 26' refers to alternative mediaeval ways of dividing up the text.

[80] The one just quoted in the preceding paragraph. I'm skipping quite a bit here.

[81] That is, the air.

the same cause [in the sense of] excluding [any] other in the aspect of a cause, but not [in the sense of] excluding [any] other in the aspect of a more immediate effect. In that case, it would be granted that in some way a closer effect is a "cause" with respect to the remoter effect, not properly [speaking], but because of the priority that obtains between such effects in relation to the cause. So [too] it can be granted in the case of many signs ordered to the same significate that one is in some way a sign of another, because it gives one to understand it. For the remoter would not signify unless the more immediate in some way signified beforehand. Yet because of this the one is properly not a sign of the other, just as in the other case of a cause and the caused things.

(34) Walter Burley, *On the "Old Art" of Porphyry and Aristotle*[82]: Second, you have to understand that for a name and a verb to signify passions of the soul can be understood in two ways. In one way, so that the name and the verb signify passions of the soul as the things they are first imposed to signify. It can be understood in another way [too], so that they signify passions of the soul as the things *by means of which* [the names and verbs] are imposed to signify. In the first way it is not necessary that a name and a verb signify passions of the soul … In the second way, I say that names and verbs do signify passions of the soul … And I say the above when speaking about names of first intention, since they are not imposed first to signify passions of the soul. Yet it is quite possible that some name does signify a passion of the soul — for instance, names of second intention, and also utterances like 'passion of the soul', 'thing's likeness in the soul', and so on. Nevertheless, Boethius says here that an utterance does not first signify an external thing but rather something in the soul, and *as a consequent* signifies an external thing. But I believe this should not be understood in the sense that the utterance is not first imposed [to signify an external thing]. For if it first signifies something in the soul, it is not necessary that it signify that thing as that on which it is first imposed. Rather [it suffices that it signify that thing] as that which first moves the understanding to impose the name on the understood thing.

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[82] Walter Burley, *Burlei super artem veterem Porphirii et Aristotelis*, (Venice: Otinus [de Luna] Papiensis, 11 May 1497). Copy at Lilly Library, Indiana University. There are no folio numbers, but the passage is in Burley's commentary on *De interpretatione* 1, 16ª3f.: "Secundo est intellegendum quod nomen et verbum significare passiones animae dupliciter potest intellegi. Uno modo quod nomen et verbum significant passiones animae tanquam illa quae imponuntur primo ad significandum. Alio modo potest intellegi quod significent passiones animae tanquam illa mediantibus quibus imponuntur ad significandum. Primo modo est necessarium nomen et verbum significare passiones animae … Secundo modo dico quod nomina et verba significant passiones animae … Et dico illud loquendo de nominibus primae intentionis, quod illa non imponuntur primo ad significandum passiones animae. Bene tamen est possibile quod aliquod nomen significet passiones animae, ut nomina secundae intentionis, etiam hujusmodi voces 'passio animae', 'similitudo rei in anima', et sic de similibus. Boethius tamen dicit hic quod vox non significat primo rem extra sed aliquid in anima et ex consequenti significat rem extra. Sed credo quod non sic intellegitur quod vox non primo imponitur. Si vero primo significat aliquid in anima non est necesse quod significet illud tanquam illud cui imponitur primo sed tanquam illud quod primo movet intellectum ad imponendum nomen rei intellectae."

(35) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue, § 2 (on 16[a]3–6)[83]: Here it is to be noted first that the Philosopher[84] does not mean that all utterances properly and primarily signify passions of the soul, as if they are principally imposed to signify passions of the soul. Rather many utterances and names of first intention[85] are imposed to signify primarily *things*. For instance, the utterance 'man' is imposed primarily to signify all men — and only *when* they are men, so that when they cease to be men,[86] they cease to be signified by the utterance 'man'.

Now the Philosopher says that an utterance is "a mark of a passion of the soul" because of a certain order between them in signifying. For the passion primarily signifies things, and the utterance secondarily signifies not the passion of the soul but rather the same things that the passion signifies, so that if the passion [of the soul] changed its significates, the utterance would at once by that very fact, without any new imposition or institution, change its significates [too].

This is plainer in the case of an utterance and an inscription. For we can institute the utterance 'man' to signify such [and such] a thing. Afterwards we can so institute the written word 'man', saying the following: "I institute this written word not to signify the spoken utterance 'man' but to signify this same thing that the spoken utterance signifies and nothing else, so that whatever is signified by the utterance, and at whatever time, that same thing and not [something] else at the same time is signified by the written word." Given that, the written word will not signify the utterance but only the thing. And if the utterance changed its significate, at once by that very fact the written word would change its significate [too].

This appears [to be so] in fact.[87] Hence if all men imposed anew the utterance 'man' to signify the same thing that is signified by the utterance 'whiteness', without any change being made in writing, he who afterwards wrote the [proposition] 'Man is an animal' — [someone] else would say to him that he wrote a falsehood.[88] [The written word 'man'] would not signify the utterance ['man'] but rather the thing. This is because of an order in signifying, because namely the written word is not imposed to signify except the same thing that is signified by

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[83] Translated from William of Ockham, *Expositionis in libros artis logicae* …, pp. 347–348. I have omitted a short paragraph from the beginning, where Ockham simply divides up the text he is commenting on in the section.

[84] Aristotle was often referred to in the Middle Ages simply as "the Philosopher," much as St. Paul is still referred to sometimes as just "the Apostle."

[85] On names of first or second intention, see William of Ockham, *Summa of Logic* I.11.

[86] I suppose this means when they die. But according to the second sense of 'signify' distinguished in *Summa of Logic* I.33, they would still be signified by the term 'man' even then. Ockham is here talking about signification in the first of the four senses distinguished in *Summa of Logic* I.33.

[87] I'm not sure what this means here. It doesn't seem to mean that the hypothetical case just discussed actually occurs in fact, since Ockham goes on to give another hypothetical case in the immediately following lines. It might mean (although I doubt it) that what has gone before is not just Aristotle's personal opinion, it also seems to be actually true.

[88] Something appears to have gone wrong with the syntax in this part of the text. I translate as best I can.

the utterance, and nothing else. Now this is [done] only at the pleasure of the institutor.

Just as there is such an order in signifying between the utterance and the inscription, so there is such an order in signifying between the utterance and the passion of the soul.[89] Because of this order the Philosopher says that utterances are "marks" of passions [of the soul]. All the authoritative [texts] of the philosophers and others that sound like this should be understood in this way.

(36) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue, § 6 (still on $16^{a}3–6$[90]): And if it is said that an act of apprehending or knowing one proposition is not some one simple act, but rather is an act [made up] of many acts, which acts all [together] make up one proposition, [I argue] against this [as follows]: In that case, the propositions 'Every man is an animal' and 'Every animal is a man' would not be distinguished in the mind. For if the latter proposition in the mind is only an act of understanding made up of these particular[91] intellections, [then] since here there cannot be any particular act in the one proposition unless it is in the other one [too], and the difference of word-order does not block [the conclusion] as it blocks it in speech, there doesn't seem to be any way [for the latter proposition] to be distinguished [from the former] in the mind.

(37) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue, § 6 (on $16^{a}3–6$)[92]: To the first [objection], it can be said that by such a confused intellection singular external things are understood. For example, to have a confused intellection of a man is nothing else than to have a cognition by which one man is no more understood than another, and yet by such a cognition a man is more cognized or understood than [is] an ass. This is nothing else than for such a cognition to be more similar, in some way of being similar, to a man than to an ass, and no more [similar] to this man than to that one.

In that respect, it seems it has to be said as a consequence that an infinity [of things] can be cognized by such a confused cognition. This seems no more unthinkable than the fact that by the same love or desire an infinity [of things] can be loved or desired. But the latter does not seem unthinkable. For someone can love all the parts of some continuum, which are infinite. Or he can long for all the parts of the continuum to endure in being. Yet by such a longing, nothing is longed for except some part of the continuum — and not one any more than another. They all have to be longed for, and yet they are infinite [in number]. Likewise, one can long for there to be all the men who can be, and yet they are infinite, because an infinite [number of men] can be generated.

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[89] Better: between the passion of the soul and the utterance.

[90] Translated from William of Ockham, *Expositionis in libros artis logicae* … , p. 354.

[91] The sense here is "partial."

[92] Translated from William of Ockham, *Expositionis in libros artis logicae* …, pp. 354.88–355.105.

(38) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue, § 6 (still on $16^{a}3–6$[93]): To the second [argument] many things can be said. One is that a proposition in the mind is one [thing] composed of many acts of understanding. For example, the proposition in the mind "A man is an animal" is nothing other than **(a)** the act by which all men are confusedly understood, and **(b)** the act by which all animals are confusedly understood; and **(c)** there is an act that corresponds to the copula. Alternatively, it can be said that this proposition is one act equivalent to three such acts existing simultaneously in the intellect. In that case, according to this way of talking, a proposition is not something *really* composite, but only by an equivalence — that is, it is equivalent to such a composite.

But in that case it is hard to save the fact that these propositions are distinguished in the mind: "Every animal is a white [thing]" and "Every white [thing] is an animal," and [other pairs of propositions] like this. For they are not distinguished in the mind because of a different word-order in the way they can be distinguished in speech. For conjoining the quantifier to one spoken utterance or to the other plainly results in a different proposition. But this cannot be maintained in the mind. For such acts of understanding in the mind, since they exist simultaneously and in the same subject (because [they exist] in the intellect), cannot have such a different word-order. Neither is the same act of understanding able to be combined with one [act] more than with another.

To this [argument], it can be said that a proposition can be an act of understanding *equivalent* to one whole proposition composed of really distinct [components] if they were to have an order such as they have in speech.[94] And in that case there will be distinct propositions, according as the corresponding [spoken] propositions would be distinguished if their terms or parts were ordered in one way or the other …

(39) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue § 7 (yet again on $16^{a}3–6$)[95]: But it could be maintained that such [things] are not true qualities of the mind, and are not real beings existing subjectively in the soul, but are only certain [entities] known by the soul, in such a way that their being is nothing other than their being cognized. They can be called "specters,"[96] according to some [people's] way of speaking, certain "ficta," according to other [people's] way of speaking.

In this fashion it can be said that the intellect, when it apprehends a singular, fashions a similar singular [in the mind], and the singular so fabricated does not exist anywhere really, any more than the fort the artisan fashions [in his mind] exists really before he produces it. Yet it is such in fictive being as the other is externally…

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[93] Translated from William of Ockham, *Expositionis in libros artis logicae* …, pp. 355.110–356.133.

[94] That's pretty badly put, but it's what the Latin says.

[95] Translated from William of Ockham, *Expositionis in libros artis logicae …,* p. 359.28–360.17.

[96] specters = *idola.*

(40) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue, § 7 (on 16[a]3–6)[97]: I do not think there is anything very weighty against this opinion, except that it is hard to imagine that something can be understood in a real intellection and yet neither it nor any part of it nor anything that belongs to it can be in reality, and it cannot be either a substance or an accident. The *fictum* would be supposed to be like this.

(41) William of Ockham, *Commentary on Aristotle's De interpretatione* I, Prologue, § 7 (on 16[a]3–6)[98]: Likewise, such a *fictum* would differ more from any thing than any thing [does] from another [thing]. For a real being and a being of reason differ more than [do] any two real beings. Therefore, such a fictive being is less similar to the thing …

(42) William of Ockham, from *Summa logicae* II.1[99]: Another division of the proposition is that one kind of proposition is assertoric and another kind is about a mode, or "modal." A modal proposition is one in which a mode occurs; an assertoric proposition is one that is without a mode.

It needs to be known that, even though all sophists[100] as it were agree that only four modes ('necessary', 'impossible', 'contingent' and 'possible') make a proposition modal —this is because the Philosopher did not touch on more modes [than those], and did not discuss more [modes] in the book *Prior* [*Analytics*], when he was dealing with the conversion of such [modal] propositions and with syllogisms put together out of them — nevertheless, because he did not *deny* other [modes], therefore, speaking more generally, it can be said that there are more modes that make propositions modal than those four.

On this point, you need to know that a proposition is called "modal" because of a mode added in the proposition. But not just any mode suffices for making a proposition modal. Rather it has to be a mode predicable of the whole proposition. Therefore, it is properly called a "mode of the proposition," as [something] that can be verified of the proposition itself. The proposition is called "modal" from such a mode, or [from] the adverb of such a predicable [mode], if it has an adverb, or [from the corresponding] verb. But there are more modes like that than the four mentioned above.

For just as one kind of proposition is necessary, another impossible, another possible, and another contingent, so [too] one kind of proposition is true, another false, another known, another unknown, another spoken, another written, another conceived, another believed, another opined, another doubted, and so on. Therefore, just as a proposition in which there occurs the mode 'possible', 'necessary', 'contingent' or impossible', or the adverb of one of these [modes], is called "modal," so a proposition in which one of those just mentioned occurs can be

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[97] Translated from William of Ockham, *Expositionis in libros artis logicae …,* p. 360.30–34.

[98] Translated from William of Ockham, *Expositionis in libros artis logicae …,* pp. 360.35–361.38.

[99] Translated from Gál *et al.,* ed., pp. 242.33–243.66.

[100] This doesn't mean "sophists" in the pejorative sense. It means people who argue by means of "sophismata." In Ockham's day, it in effect just meant "those who do logic."

called "modal" with equal reason. Therefore, just as 'For every man to be an animal is necessary' is modal, and likewise 'Every man of necessity is an animal', so too 'For every man to be an animal is known' [and] 'Every man is known to be an animal' are modal, and likewise [propositions] such as 'For every man to be an animal is true', and so on.

If someone asks why the Philosopher did not deal with these, and did not count them among the modal propositions, it must be said that the Philosopher, who was seeking brevity, because what he said about the other [modes] can be applied to these, did not want to deal with these at length…

(43) William of Ockham, from *Summa logicae* II.2[101]: On this point, it has to be said that for the truth of such a singular proposition that is not equivalent to many propositions[102] it is not required that the subject and the predicate be really the same, or that the predicate on the part of reality be in the subject, or be really in the subject, or that, on the side of the thing outside the soul, it be united with the subject.[103] For example, for the truth of 'He is an angel' it is not required that the common [name] 'angel' be really the same as what occurs in subject position, or that it be really in it, or anything like that. Rather it suffices and is required that the subject and the predicate supposit for the same. Therefore, if in 'He is an angel' the subject and the predicate supposit for the same, the proposition will be true. Therefore, it is not denoted that he has "angelity" or that "angelity" is in him, or anything like that. Rather it is denoted that he is truly an angel. Not that he is that predicate, but that he is what the predicate supposits for.

Likewise too it is not denoted by propositions like 'Socrates is a man' [and] 'Socrates is an animal' that Socrates has humanity or animality, and it is not denoted that humanity or animality is in Socrates, or that *man* or *animal* is in Socrates, or that *man* or *animal* belongs to the essence or quiddity of Socrates, or to the quidditative notion of Socrates. Rather it is denoted that Socrates truly is a man and truly is an animal. Not that Socrates is the predicate 'man' or the predicate 'animal'. Rather it is denoted that he is some thing for which the predicate 'man' and the predicate 'animal' stand or supposit. For both of those predicates stand for Socrates.

(44) William of Ockham, from *Summa logicae* II.3[104]: Now that we have seen what suffices for the truth of a singular proposition, we have to see what is required for the truth of an indefinite and a particular proposition … For the truth of such [propositions] it is sufficient that the subject and the predicate supposit for something the same, if it an affirmative proposition and a universal quantifier is not added on the side of the predicate. (I say that on account of such [propositions] as 'Some animal is every man', 'Some angel is every angel'.) But if such [a proposition] is negative, it is required that the subject and the predicate not sup-

[101] Translated from Gál *et al.,* ed., pp. 249.8–250.31.

[102] That last clause in effect means "that is not an 'exponible' proposition." Don't worry about it.

[103] The last three clauses are simply alternative ways of saying the same thing.

[104] Translated from Gál *et al,* ed., p. 255.3–16.

posit for everything the same. In fact, it is required that the subject either supposits for nothing or else supposits for something the predicate does not supposit for.

(45) William of Ockham, from *Summa logicae* II.4[105]: Therefore, first it has to be known that for the truth of such a universal proposition it is not required that the subject and the predicate be really the same. Rather it is required that the predicate supposits for all those [things] the subject supposits for, so that it is verified of them. If that is so, then unless some special cause prevents it,[106] the universal proposition is true. This is what is commonly said, that for the truth of such a universal proposition, it is sufficient that each singular be true.

(46) William of Ockham, from *Summa logicae* II.7[107]: First you need to know that any proposition about the past or about the future in which a common term is the subject, or a demonstrative pronoun with a common term, or a discrete term conveying something composite, has to be distinguished insofar as the subject can supposit for what is or for what was, if it is a proposition about the past, or for what is or for what will be, if it is a proposition about the future. And whether it is the one or the other, if it is an affirmative proposition it is required that the predicate under its proper form — that is, that the predicate itself — be truly predicated by such a verb of what the subject supposits for, so that, in other words, a proposition in which the predicate is predicate of a pronoun indicating precisely what the subject supposits for *was* at one time true, if it is a proposition about the past, or that it *will* be at one time true, if it is a proposition about the future.

(47) William of Ockham, from *Summa logicae* II.9[108]: After assertoric propositions, we must talk about modal propositions. You need to know first that a proposition is sometimes said [to be] "about a mode" because the *dictum* of a proposition is taken with such a mode. This is clear, for example, with 'For every man to be an animal is necessary', 'For a man to run is contingent', 'For every man to be colored is true',[109] 'For every man to be an animal is *per se* in the first mode',[110] 'For everything necessary to be true is known', 'For Socrates to run is unknown', and so on. But another kind of proposition is called "modal" in which the mode occurs without such a *dictum* of a proposition.

A modal proposition said in the first sense always has to be distinguished according to composition and division. In the sense of composition it is always denoted that such a mode is verified of the *dictum's* [corresponding] proposition. For example, it is denoted by 'For every man to be an animal is necessary' that the mode 'necessary' is verified of the proposition 'Every man is an animal', the *dictum* of which is the stated [expression] 'for every man to be an animal'. For

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[105] Translated from Gál *et al.,* ed., p. 260.54–60.

[106] Let's not go into the special causes that might arise.

[107] Translated from Gál *et al.,* ed., p.p. 269.3–270.15.

[108] Translated from Gál *et al.,* ed., p. 273.2–25.

[109] This has no racial overtones at all. He just means that every man has *some* color or other.

[110] This refers to a certain distinction in the *Posterior Analytics*. Don't worry about it.

[an expression] is called a "*dictum* of a proposition" when terms of the proposition are taken in the accusative case and the verb in the infinitive mood.

But the sense of division of a proposition like that is always equipollent to a proposition taken with a mode [but] without such a *dictum.* For example, 'For every man to be an animal is necessary', in the sense of division, is equipollent to 'Every man of necessity (or necessarily) is an animal'. Likewise, 'For Socrates to be an animal is known' is equipollent to 'Socrates is known to be an animal'. And so on.

(48) William of Ockham, again from *Summa logicae* II.9[111]: From these [facts], it is plain that to know what is required for the truth of such propositions it suffices to know what is required for a proposition to be necessary and for it to be contingent, impossible, known, unknown or believed, and so on. It would take too long to treat all of these in detail.

Nevertheless, as for a necessary proposition, you need to know that a proposition is not called "necessary" because it is always true but because it is true if it exists, and cannot be false. For instance, the proposition in the mind 'God exists' is necessary, not because it is always true (for if does not exist it is not true) but rather [because] if it exists it is true, and it cannot be false. Likewise the spoken proposition 'God exists' is necessary, and yet it is not always true. For when it does not exist, then it is neither true nor false. But if it is spoken it is true, and it cannot be false unless the terms are instituted to signify in some other way.

It ought to be said analogously for an impossible proposition, that it is one that is false if it exists. Yet it is not false unless the proposition exists. And so analogously for a contingent proposition. But in order for a proposition to be known or believed, and so on, more is required. Now *what* is required, that is a matter belonging to the *Posterior Analytics* and to other books.

(49) William of Ockham, from *Summa logicae* II.10[112]: As for modal propositions without a *dictum* of a proposition, which are entirely equipollent to propositions taken with a *dictum* in the sense of division, you need to know that they are not converted with the first kind. In fact, the one of them can be true while the other is false, and conversely. For example, according to Aristotle 'For every man to be an animal' is necessary' is true in the sense of composition, and yet 'Every man of necessity is an animal' is false. Likewise, 'For everything true to be true is necessary' is true according to Aristotle's view, and yet 'Everything true necessarily is true' is false. And so on for many other cases.

For this reason, you need to know that for the truth of such propositions it is required that the predicate, under its proper form, be applicable to what the subject supposits for, or to a pronoun indicating what the subject supposits for, so that, in other words, the mode expressed in such a proposition is truly predicated of an assertoric proposition in which the very same predicate is predicated of a pronoun indicating what the subject supposits for, analogously to what was said

[111] Translated from Gál *et al.,* ed., p. 275.67–84.

[112] Translated from Gál *et al.,* ed., pp. 276.2–277.49.

about for propositions about the past and [those] about the future.[113] For example, for the truth of 'Every truth of necessity is true' it is required that each proposition be necessary in which the predicate 'true' is predicated of anything for which the subject 'truth' supposits — in other words, that each [proposition] like 'This is true', 'That is true', be necessary, indicating anything the subject supposits for. And because not just any such [proposition] is true, therefore 'Every truth of necessity is true' is simply false.

Likewise, it is not denoted by 'The creator[114] is able not to be God' that 'The creator is not God' is possible, because in that case it would be a true [proposition] about the possible.[115] Rather it is denoted that 'This is not God' is possible, indicating what the 'creator' supposits for in 'The creator is able not to be God'. And this is simply impossible, since 'creator' in 'The creator is able not to be God' supposits for God. And certainly 'This is not God' is impossible, indicating God.

Likewise, it is denoted by 'The creator necessarily is God' that 'This is God' is necessary, indicating what 'creator' supposits for in the proposition just mentioned about the necessary. And that is true. Therefore, that proposition about the necessary is true. Nevertheless, it is not necessary. Rather it is contingently true, because assuming that God would cease to create, then it would be false, just as the corresponding assertoric [proposition] would be false, namely 'The creator is God'.

It is not something inconsistent that a true proposition about the necessary should be contingent, as is clear in the example above. And just as a true proposition about the necessary can be contingent, so a proposition true about what is *per se*[116] can be true *per accidens*[117] and contingently. So too in many other cases.

Yet notwithstanding that such [propositions] are true, nevertheless [propositions] like 'God necessarily is a creator' are false, and [propositions] like 'God contingently is a creator', 'God is able not to be a creator', 'God is able to be not a creator', and so on, are true. This is because no proposition in which the predicate 'creator' is predicated of a pronoun indicating what the term 'God' supposits for is necessary but rather contingent. For every proposition like 'This is a creator', 'This is not a creator', is contingent, indicating God.

(50) William of Ockham, again from *Summa logicae* II.10[118]: Second, you need to know that such propositions about a mode are related in the same way to their singulars as are assertoric propositions. Therefore, it is impossible that such a universal [proposition] be true or necessary or contingent unless each singular be true or necessary or contingent.

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[113] See Text **(46)** above.

[114] "creator" = *"creans,"* literally "the creating," the present active participle.

[115] If God exercised his free choice not to create, there would be no creator, so that the subject term would not have anything to supposit for, and the proposition would be true in virtue of being a negative categorical with a non-denoting subject.

[116] Following a variant reading in the edition at line 40.

[117] Don't worry about these. They come from the *Posterior Analytics*.

[118] Translated from Gál *et al.,* ed., p. 278.87–90.

(51) William of Ockham, *Quodlibet* 5, q. 8[119]:

(1) Do all the grammatical accidents of spoken terms belong to mental terms [too]?

(2) Yes. For the term in the mind and the [corresponding] one in speech are subordinated signs[120] of the same thing. Therefore, everything [that is] an accident of the one is an accident of the other.

(3) To the contrary, gender and declension[121] are accidents of spoken names and not of mental ones. Therefore, etc.

(4) Here, I first assume a preliminary conclusion. Second, I shall speak to the question.

(5) As for the first point, I say that just as among spoken and written terms some are names, [while] others [are] verbs, others pronouns, others participles, others adverbs, others conjunctions, [and] others prepositions, so [too] among mental concepts some concepts are names, others [are] verbs, others adverbs, others conjunctions, [and] others prepositions. This is clear from the fact that for every spoken expression, true or false, there corresponds some mental proposition put together out of concepts. Therefore, just as the parts of the spoken proposition that are imposed to signify things on account of the necessity of signification or expression (for it is impossible to express all [things] by means of verbs and names alone that can be expressed by means of [them together with] the other parts of speech) are distinct parts, so [too] the parts of the mental proposition that correspond to utterances are distinct, to make distinct true and false propositions.

(6) As for the second point, I say that the accidents of spoken names and [spoken] verbs are of two kinds. For some are common accidents, others proper ones. In accordance with this, I set out some conclusions:

(7) The first [conclusion] is that the common accidents of spoken names belong [also] to mental names. This is proven inductively. For the first common accident is case, the second one number, [and] the third one comparison.[122] It is plain that, just as the spoken propositions 'A man is a man' [and] 'A man is a man's' have distinct predicates that vary only in case,[123] [and] on account of this variation the one proposition is true and the other one false, so [too] the propositions in the mind corresponding to the spoken propositions 'Socrates[124] is a man' [and] 'Socrates is a man's' have distinct predicates that vary only in case.

(8) [Here is] an example of the second [common accident]. The spoken propositions 'A man is an animal' [and] 'A man is animals' have distinct predicates that vary only in number, [and] on account of this variation the one [propo-

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[119] Translated from Wey ed., pp. 508.2–513.136 (compare Freddoso and Kelley, trans., pp. 424–429. The passage contains the entire question. Since I sometimes refer small parts of this text, I have divided it into numbered paragraphs.

[120] That is, the spoken one is subordinated to the mental one.

[121] That is, not the property of being declined, but rather, for example, belonging to the first declension, or belonging to the second declension.

[122] That is, being of positive, comparative or superlative degree.

[123] The predicate of the former is in the nominative, and of the latter in the genitive.

[124] The switch from 'a man' to 'Socrates' is not significant. Ockham just lost track of his example.

sition] is true and the other one false. So [too] the corresponding propositions in the mind have distinct predicates that vary only in number. This variation makes the one proposition true and the other one false.

(9) [Here is] an example of the third [common accident]. Just as the spoken propositions 'A man is white', 'A man is whiter', [and] 'A man is whitest' have distinct predicates that vary only in [degree of] comparison, [and] on account of this variation the one [proposition] can be true while the other is false, so analogously for the corresponding propositions in the mind.

(10) But there is a doubt about whether the quality of the spoken name[125] belongs to the mental name.

(11) The second conclusion is that the proper accidents of names only belong to spoken names and not to mental ones. These are gender and declension. The reason for this is that these accidents do not belong to a name on account of the necessity of signification, as the others do, or because of the necessity of expression, but rather for the sake of decorating [one's] speech and for well-formedness. This is clear from the fact that these two accidents belong to synonymous names. For example, 'stone' and 'rock', which belong to different genders and declensions.[126] Therefore, one should not attribute the multitude of accidents that belong to synonymous names to natural signs [too], such as concepts, just as there is no plurality of concepts corresponding to synonymous names.

(12) Therefore, in order to see which proposition is true and which one [is] false in the mind, you do not have to look at which gender or which declension the subject or predicate is in. But you do have to consider which case and which number and which degree [of comparison] the subject and predicate are in, as was said above.[127]

(13) Neither do you have to look to these accidents of the subject or predicate for the sake of the truth and falsity of a spoken proposition, but only for [its] well-formedness. For 'A man is he-white' is well-formed, and 'A man is she-white' is ill-formed.[128] And this arises from the difference in gender. Therefore, although the spoken propositions 'A man is he-white' and 'A man is she-white' have distinct predicates, nevertheless the corresponding predicate in the mind is the same for both [of them].

(14) Thus, assuming the well-formedness of speech, it makes no difference which gender or declension the subject or predicate is in. For just as 'A diamond is a stone' is true, so [too] 'A diamond is a rock' is true, where there is difference in the predicate with respect to gender and declension.[129] Nevertheless, in

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[125] I do not know what this is. 'Quality' sometimes refers to the mood of a verb, but we are not talking about verbs here.

[126] The point cannot be made in English which has no declensions and (except for pronouns) no gender. The Latin words are '*lapis*' (third declension, masculine) and '*petra*' (a Greek loan-word, first declension, feminine).

[127] See §§ 7–9, above.

[128] Can you translate them any better? The Latin of these two propositions is '*Homo est albus*' and '*Homo est alba*'. '*Homo*' is a masculine noun, and so requires the masculine adjective '*albus*', not the feminine adjective '*alba*'.

[129] On 'stone' and 'rock', see n. 126 above.

the mind there are no corresponding distinct predicates, as [there are] in speech. Neither can the one [proposition] be true, even in speech, unless the other one is true [as well].

(15) The third conclusion is that the common accidents of verbs belong to mental verbs [as well as to spoken ones]. They are five, namely, mood, voice, number, tense, and person. For the following are distinct propositions in speech [and] have distinct predicates that vary only with respect to these accidents (on account of which variation sometimes the one is true and the other one not): For example, in 'Socrates reads', [and] 'Socrates, read!', where there is a variation only in mood. Likewise, in 'Socrates loves' [and] 'Socrates is loved', where there is a variation only in active and passive voice. Likewise, in 'Thou readest' [and] 'You read', where there is a variation only in number. Likewise, in 'You read' [and] 'You have read', where there is a variation only in tense. Likewise, in 'He reads' [and] 'I read', where there is a variation only in person. So too, there correspond to these [propositions] distinct mental expressions having distinct predicates that vary in [their] accidents in the same way. This variation causes [a variation] in truth or falsehood in the proposition, because a proposition in speech is never true or false unless there corresponds to it a similar[130] one in the mind.

(16) The fourth conclusion is that the proper accidents of verbs only belong to spoken and written verbs. (For there is the same verdict in all cases for terms in speech and [terms] in writing.) They are conjugation[131] and inflection.[132] The reason [for this conclusion] is that sometimes verbs in different conjugations and of different inflections can be synonymous. Consequently, such a diversity [of conjugation and inflection] does not have to correspond to them in the mind.

(17) And what was said for the accidents of names and verbs must be said analogously for the other parts of speech.

(18) But there is one doubt. Do intentions in the mind, distinct from verbs, correspond to spoken participles?

(19) I reply: There is no necessity to posit such a plurality in the mind. For a verb and the participle of the verb taken together with the verb 'is' are always equipollent in signifying and are synonymous. Thus, synonymous names were not invented on account of the necessity of signification, but for the sake of the decoration of speech. (For whatever is signified and expressed by all the synonymous names could be expressed well enough by one of them. Hence a plurality of concepts does not correspond to several synonymous names.) So too, since spoken verbs and their participles were not invented because of the necessity of signification or expression, therefore such a multitude of concepts does not correspond to them in the mind.

(20) To the principal argument,[133] I say that everything that is an accident of a mental term is an accident of a spoken term, but not the other way around.

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[130] That is, with the same truth value.

[131] That is, not being conjugated, but rather belonging, for example, to the first conjugation, or belonging to the second. English does not have conjugations in this way.

[132] 'inflection' = *figura*. I am not sure what grammatical feature this is. The distinctions of person, number, tense, etc., are all preserved in mental language, as Ockham has just argued.

[133] In § 2, above.

For some [things] are accidents of spoken terms because of the necessity of signification and expression, and they belong to mental names. Others are accidents of spoken terms for the sake of the decoration of speech (like synonyms) and for the sake of well-formedness, and they do not belong to mental terms.

(52) William of Ockham, from *Quodlibet* 5, q. 9[134]:

(1) Are mental names distinguished into concrete and abstract [ones] as spoken names [are]?

(2) Yes. For it is impossible that the same proposition at one and the same time be [both] true and false. But the mental proposition 'A man is white' is true, and 'A man is a whiteness'[135] is false. Therefore, it is not the same proposition in the mind. But the subject is the same, and [so is] the copula. Therefore, the predicate is different [in the two mental propositions]. And [the predicate differs] only as concrete and abstract. Therefore, etc.

(3) To the contrary, some concretes and abstracts are synonymous, like 'cold'[136] and 'coldness'. But there is no plurality in the mind corresponding to the multitude of synonymous names in speech. Therefore, etc.

(4) Here I shall first [set out as] a premise a distinction concerning the concrete and the abstract. Second, [I shall respond] to the question.

> [The distinction is the division of concrete and abstract terms into four kinds. The discussion exactly parallels the treatment in *Summa of Logic* I.5–6 & 8–9. I have not translated it here.]

(5) As for the second point, I say that [the distinction between] concrete and abstract in the first, third and fourth modes belongs to mental names just as [it does] to spoken ones. Consequently, such mental names are varied with respect to these [ways of being] concrete and abstract.

(6) The reason for this is that the same mental proposition cannot be true and false together, whatever the case is for a spoken proposition.[137] But the proposition 'A man is white' is true in the mind, and 'A man is a whiteness' is false. And there is no variation here except in the predicates, with respect to concrete and abstract in the first mode. Likewise, 'A man runs' is true in concept,[138] and 'Humanity, or man inasmuch as he is man, runs' is false. Here there is only a variation of concrete and abstract in the third mode. Likewise, 'A people is many

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[134] Translated from Wey ed., pp. 513.2–514.14, 517.101–518.127 (compare Freddoso and Kelley, trans., pp. 429, 432). Again, I have numbered the paragraphs.

[135] For Ockham, there is no one universal quality "whiteness." There are only individual whitenesses, the whiteness of Socrates and the whiteness of Plato, etc. I have included the indefinite article here only because English requires it if it is to preserve the sense of Ockham's Latin. Latin has no indefinite article, so that the two Latin propositions do not differ in this respect.

[136] The noun, not the adjective.

[137] An *equivocal* spoken proposition can be true in one sense and false in another. But there is no equivocation in mental language.

[138] That is, in the mind.

men' is true in concept, and 'A popular[139] is many men' is false, with respect to the fourth mode. Therefore, etc.

(7) Moreover, a concept of a concrete in the first mode signifies one [thing] in the nominative and another in an oblique [case]. The [corresponding] concept of an abstract only signifies in the nominative. Therefore, etc.

(8) But [the distinction between] concretes and abstracts in the second mode varies only spoken names, and not mental ones. The reason for this is that it is impossible that a proposition be true in which there occurs a concrete [term in the second mode] unless the [proposition] is true in which there occurs its [corresponding] abstract [term]. Likewise, whatever grammatical or logical mode the one signifies in, the other one signifies in [too]. Consequently, even though there is such a plurality in speech, [it does] not [exist] in concept, because a multitude of concepts does not correspond to the multitude of synonymous names.

(9) To the main argument,[140] [the reply] is clear enough from what has been said.

(53) William of Ockham, from *Quodlibet* 5, q. 10[141]: As for the first point, I say that the name 'synonym' is taken in two ways, namely strictly and broadly. In the strict sense, those names are called "synonyms" which all users intend to use simply for the same thing and in the same mode of signifying. For example, 'Marcus' and 'Tully' are synonyms.[142] In the broad sense, those names are called "synonyms" which simply signify the same thing in all ways and in the same mode of signifying, in such a way that nothing is in any way signified by the one unless it is signified in the same mode of signifying by the other, even though not all users believe them to signify the same thing but, being deceived, they think something is signified by the one that is not signified by the other. For example, if someone believed that the name 'God' conveyed a whole and 'deity' its part.[143]

(54) John Buridan, *Treatise on Supposition*[144]: Supposition is divided in another way into material and personal. Supposition is called personal when the subject or predicate of a proposition supposits for its ultimate significates or for its ultimate significate, as the term 'man' supposits for men in the proposition 'a man runs'. But supposition is called material when an utterance supposits for itself or for its like[145] or for its immediate significate, which is the concept accord-

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[139] That is, a popular *thing*. I am reading '*populare*' with several manuscripts, against the edition's '*popularis*'.

[140] In § 2, above.

[141] Translated from Wey ed., p. 519.17–28 (compare Freddoso and Kelley, trans., pp. 433–434.

[142] For the non-classicists among you, 'Marcus' and 'Tully' are both names for Cicero.

[143] 'Deity' here means the divine nature. The point is that God is supposed to be simple and so does not have parts. Thus God does not consist of the divine nature (= deity) plus something else. People who have the wrong metaphysics might think otherwise, but their mistake does not prevent 'God' and 'deity' from being synonyms anyway, in the "broad" sense.

[144] John Buridan, *Tractatus de suppositionibus,* Reina ed., p. 201.34–41; King trans., p. 118 § 3.2.1.

[145] That is, for another token of the same type.

ing to which it is imposed to signify. For instance, the term 'man' in the proposition 'Man is a species', 'Animal is a genus'.

(55) John Buridan, *Treatise on Supposition*[146]: Yet I say that in determinate supposition the truth does not have to be for one suppositum alone. In fact, sometimes it is true for each [suppositum]. Rather it is required and sufficient that it be true for some one [suppositum]. Thus it must be noted at once that there are two conditions for the determinate supposition of some common term. The first is that from each suppositum of that term the common term can be inferred, the other [factors] in the proposition remaining as they stand. For example, because the term 'man' in 'A man runs' supposits determinately, therefore it follows: "Socrates runs; therefore, a man runs," "Plato runs; therefore, a man runs," and so on for each singular contained under 'man'.

The second condition is that from a common term that supposits in this way all the singulars can be inferred disjunctively according to a disjunctive proposition. For example, it follows: "A man runs; therefore, Socrates runs or Plato runs, or John runs," and so on.

(56) John Buridan, *Treatise on Supposition*[147]: Confused supposition is divided into distributive and non-distributed. The latter we usually call "merely confused." The distributive kind is that according to which from a common term each of its singulars can be inferred separately or even all together copulatively according to a copulative proposition. For example, 'Every man runs'. It follows: 'Therefore, Socrates runs', 'Therefore, Plato runs', or even 'Therefore, Socrates runs *and* Plato runs', and so on.

(57) John Buridan, *Treatise on Supposition*[148]: But merely confused supposition is that according to which no singular follows separately, when the other [factors] in the proposition are retained as they stand. Neither do the singulars follow disjunctively according to a disjunctive proposition, although perhaps they do follow according to a proposition with a disjoint extreme.

(58) John Buridan, *Treatise on Consequences*[149]: But the subject of a proposition is not determined in this way by the tense of the verb. Indeed, it always retains supposition for the things of the present, and further, if the verb has another tense, it is ampliated to the things of the time of the verb, together with present things.

(59) John Buridan, *Treatise on Consequences*[150]: Note that a proposition with the subject ampliated by the predicate is to be expounded by a disjunction on the part of the subject, between the present time and the time or times the ampliation is made to. For example, **(a)** 'B will be A': 'What is or will be B will be **A',** **(b)** 'A man has died': 'He who is or was a man has died', **(c)** 'Antichrist is able to

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[146] Reina ed., p. 323.348–361; King trans., pp. 129–130 §§ 3.5.3–6.
[147] Reina ed., p. 324.367–372; King trans., p. 130 § 3.6.1.
[148] Reina ed., p. 324.373–376; King trans., p. 130 § 3.6.1.
[149] Hubien ed., I.6.15–18, p. 27; King trans., p. 189, §§ 1.6.3–1.6.4.
[150] Hubien ed., I.8.363–369, p. 43; King trans., pp. 210–211, § 1.8.64.

be a man': 'He who is or is able to be Antichrist is able to be a man', and **(d)** 'A rose is understood': 'What is or was or will be or can be a rose is understood'.

(60) John Buridan, *Sophismata*, Ch. 1, from his discussion of sophism 4[151]: For "to signify" is described as being "to establish the understanding" of a thing. Hence a word is said to signify that the understanding of which it establishes in us.

(61) John Buridan, *Sophismata*, Ch. 1, conclusion 1[152]**:** And the first conclusion is that written letters signify utterances [that are] spoken or will be spoken. And they do not signify any things outside the soul, such as asses or rocks, except by means of the signification of utterances.

(62) John Buridan, *Sophismata*, Ch. 1, conclusion 2[153]: The second conclusion: significative utterances signify passions (that is, concepts) of the soul and not other things, except by means of the signification of concepts.

(63) John Buridan, *Sophismata*, Ch. 1, from his discussion of conclusion 8[154]: Hence it is to be noted further that although an utterance immediately signifies a concept, nevertheless by means of the concept it is imposed to signify the [things] that are conceived by that concept.

(64) John Buridan, *Sophismata*, Ch. 1, from his discussion of conclusion 8[155]**:** And so too a written term, if it does not supposit materially, neither supposits for itself nor for the utterance it immediately signifies nor for the concept it signifies consequently, by means of the utterance …

(65) John Buridan, *Sophismata*, Ch. 2, from the statement of sophism 5[156]: … If you say that [the proposition 'A man is an ass'] not only signifies a man and an ass, but [also] signifies *a man to be an ass*, I prove that this is false, because *for a man to be an ass* neither is nor was nor is able to be anything. And so in the proposition '*For a man to be an ass* is signified by a proposition like ['A man is an ass']', the subject — namely, *'for a man to be an ass'* — supposits for nothing. Therefore, the proposition is false, since it is an affirmative the subject of which supposits for nothing.

Again, if you say that the proposition is an affirmative one signifying [*the case*] *to be somehow*[157] then I ask whether *for* [*the case*] *to be somehow* is [real]

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[151] Scott ed., p. 22; Scott trans., p. 67.

[152] Scott ed., p. 24; Scott trans., p. 70.

[153] Scott ed., p. 25; Scott trans., p. 70.

[154] Scott ed., p. 28; Scott trans., p. 75.

[155] Scott ed., p. 28; Scott trans., p. 75.

[156] Scott ed., p. 37; Scott trans., p. 85. Note that these arguments occur in the *statement* of the sophism. Buridan is not here committing himself to them. The last sentence of the quotation is probably unintelligible out of context, but I needed to include it to fill out the two-case argument.

[157] [the case] to be somehow: *aliqualiter esse*. Literally: "a being somehow." The idea is that the proposition signifies "such and such to be the case." The words 'the case' have no correlate in the Latin, and are added in an attempt to make the English a little smoother. If you want,

or is not. If you say it is not, then what you say is false, namely that *for the case to be somehow* is signified by that proposition. For, as I said, the proposition is affirmative and [its] subject supposits for nothing. If you say that it is [real], then we have [established] the point, that however [the proposition] signifies so [the case] is.

(66) John Buridan, *Sophismata*, Ch. 2, from conclusion 3[158]: The third conclusion is that the proposition 'A man is an ass' does not signify *a man to be an ass*. Or also, [put another way,] *for a man to be an ass* is not signified by the [proposition] 'A man is an ass'. For *for a man to be an ass* neither is nor will nor is able to be [real]. For just as *for a man to run*, if it is [real], is a running man, and [just as] *for a man to be white*, if it is [real], is a white man, so [too] *for a man to be an ass*, if it is [real], is an existing man-ass. And that is for the impossible to be [real]. Therefore, the proposition '*For a man to be an ass* is signified' is affirmative, and yet its subject supposits for nothing. ([This follows] from the fact that *for a man to be an ass* cannot be anything else [than an existing man-ass].) Therefore, [the proposition] is false. From this it follows that this is true '*For a man to be an ass* is *not* signified by a proposition like that'.

In the same way it is [also] proved that *for a man to be an ass* cannot be imagined or understood or opined, and so on.

But you ask "Isn't it false for a man to be an ass?" I reply that it is neither true nor false literally — that is, taking the whole [expression] significatively and not according to material supposition. Yet it is to be granted that often such expressions in the infinitive mood are taken materially, and [then] they supposit for some propositions. For example, 'for a man to run' [can supposit materially] for the proposition 'A man runs', and 'for a man to be an ass' for the proposition 'A man is an ass'. And in that case it is to be granted that *for a man to be an ass* is false — that is to say, that the proposition 'A man is an ass' is false. [And] so [in that sense] it is to be granted that *for a man to be an ass* is *not* nothing, but rather is a false proposition.

On this point, note that some people, in order to run away from the difficulty, want to say that such expressions in the infinitive mood do not supposit for anything *except* for propositions — for example, 'for a man to run' for the proposition 'A man runs', and 'for a man to be an ass' for the proposition 'A man is an ass', and so on.

[But] this is not true. For according to Aristotle in the *Categories*,[159] to cut is to act, and to be cut is to be acted on. So too, *for a man to cut* is *for a man to act*, and *for wood to be cut* is *for wood to be acted on*, and *for a man to be white* is *for a man to be colored*. Therefore, such propositions are to be granted, and yet they all would be false if [the infinitival expressions] supposited for propositions. For the proposition 'A man cuts' or 'A man is white' is not the proposition 'A

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think of the whole expression '[the case] to be somehow' as meaning a *state of affairs* or *situation*.

[158] Scott ed., p. 39; Scott trans., p. 87.

[159] Scott ed., p. 41, cites *Categories* 9, $11^{b}1$–4, but Aristotle does not use the example there. See instead *Categories* 4, $2^{a}2$–4.

man acts' or 'A man is colored'. Again, everyone grants that it is very good to love God and very bad to hate God. And [yet] these [propositions] would not be true [if the infinitival expressions are taken as] suppositing for propositions. For I could without any malice form in my mind the proposition 'A man hates God'.[160]

(67) John Buridan, *Sophismata*, Ch. 2, from conclusion 4[161]: … *for a man to be* is signified by the term 'man'. For every man is signified by this term 'man'; but every man is *for a man to be*, as should be seen in *Metaphysics* 4.[162] And also it is made clear elsewhere, in *Physics* 1,[163] that *for a man to generate* is a generating man, and *for a man to be white* is a white man. Therefore, it follows by Darapti in the third figure [of the syllogistic] that *for a man to be* is signified by the term 'man' and *for an ass to be* is signified by the term 'ass', and likewise *for a man to be an animal* or *for an ass to be an animal* [is signified by the term 'man' or 'ass'].

Indeed [it is] also [the case that] if a man runs, [then] *for a man to run* is signified by the term 'man'. For every man is signified by the term 'man', and yet some man is *for a man to run*. Therefore, the conclusion follows in the third [syllogistic] figure by Datisi.

(68) John Buridan, *Sophismata*, Ch. 2, conclusion 5[164]: The fifth conclusion: *for a man to be* is signified by the proposition 'A man is an ass'. For everything that is signified by the terms, or by some [one] term, of a proposition is signified by that proposition [itself]. Indeed, the proposition is not imposed to signify as a whole [taken] together in addition to its terms, which the intellect puts together affirmatively or negatively as it wishes. Therefore from the signification of [its] terms a proposition has the means to signify externally the things it signifies. Therefore, if *for a man to be* is signified by the term 'man' and *for an ass to be* [is signified] by the term 'ass', it follows that this is signified by the proposition 'A man is an ass'.

(69) John Buridan, *Sophismata*, Ch. 2, from conclusion 6[165]: A sixth conclusion seems to me has to be posited, that *for a man to have been* is signified by the term 'man', and consequently by the proposition 'A man is an ass'. For every man, present, past or future, is indifferently signified by the term 'man', because it signifies without tense. Therefore, Aristotle is signified by the term 'man' …

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[160] And if the infinitival expression 'for a man to hate God' referred to *that*, the proposition 'It is very bad [for a man] to hate God' would therefore be false.

[161] Scott ed., p. 40; Scott trans., pp. 88–89.

[162] Aristotle, *Metaphysics* 4, 2, $1003^{b}26$–29.

[163] Scott trans., p. 88 n. 11, cites *Physics* 1, 7, $190^{a}10$–12, but if the point is there at all, it is certainly not explicit. In Scott ed., p. 41, he cites Burley's commentary on the *Physics* I, q. 8, but I have not verified the reference.

[164] Scott ed., 40; Scott trans., p. 89. There are some textual complications in this passage. See the variants listed in Scott's edition, p. 41.

[165] Scott ed., p. 41; Scott trans., p. 89.

(70) John Buridan, *Sophismata,* Ch. 2, from conclusions 10–14[166]: *The tenth conclusion* is that for the truth of an affirmative categorical it is required that the terms, namely, the subject and the predicate, supposit for the same thing or things. Therefore too, for its falsehood it is sufficient that they do not supposit for the same thing or things …

The eleventh conclusion: that for the truth of a negative categorical it suffices that the subject and the predicate do not supposit for the same thing or for the same things, even though some [such proposition] is true in which the subject and the predicate do supposit for the same thing or things, as 'An animal is not a man'. So too, for the falsehood of a negative it is required that the subject and the predicate supposit for the same thing, although it does not follow: "The subject and the predicate supposit for the same thing; therefore, the negative is false"…

The twelfth conclusion: that for the truth of an affirmative indefinite or particular categorical it is required and is sufficient that the subject and the predicate supposit for the same thing …

The thirteenth conclusion: that for the truth of a universal affirmative, it is required and is sufficient that whatever thing or things the subject supposits for, the predicate supposits for that or for those things …

Therefore, in review, this *fourteenth conclusion* is posited, that every true particular affirmative is true because the subject and the predicate supposit for the same thing or things. And every true universal affirmative is true because whatever thing or things the subject supposits for, the predicate supposits for the same thing or things. And every false particular affirmative is false because the subject and the predicate supposit for nothing of the same thing or things. And a false universal affirmative is false because the predicate does not supposit for all that or all those things for which thing or things the subject supposits. And every true particular negative is true in virtue of that whereby the universal affirmative contradictory to it is false. (It has been said how that comes about.) And every false universal negative is false in virtue of that whereby the particular affirmative contradictory to it is true.

(71) John Buridan, *Sophismata,* Ch. 2, from conclusion 14[167]: But finally, it must be noted that we can use names at will. When several people generally use this way of speaking, so that we say of every true proposition that "it is the case," and of every false one that "it is not the case," I have no intention of abolishing this way of speaking. Rather, for the sake of speaking more briefly, I will perhaps use it [myself], always meaning by it not what [the clause] signifies by [its] primary imposition, but rather the causes of truths or falsehoods given above, [which are] different for different [kinds of] propositions, as had been said [above].

(72) John Buridan, *Sophismata*, Ch. 4, the first remark[168]: For first it must be known that a term [that is] naturally apt to supposit for something is said to ap-

[166] Scott ed., pp. 42–45; Scott trans., pp. 90–93.

[167] Scott ed., p. 45; Scott trans., pp. 93–94.

[168] Scott ed., p. 61; Scott trans., p. 112.

pellate everything it signifies or consignifies besides what it supposits for, unless it is restricted …

(73) John Buridan, *Sophismata*, Ch. 8, from sophism 7[169]: For some people have said, and so it seemed to me elsewhere, that even though the proposition ['Every proposition is false'], according to the signification of its terms, does not signify or assert [otherwise] than that every proposition is false, still every proposition by its form signifies or asserts itself to be true. Therefore, every proposition asserting itself to be false, whether directly or consecutively, *is* false. For, granted that it is the case as [the proposition] signifies insofar as it signifies itself to be false, nevertheless it is not so that it is the case as [the proposition] signifies insofar as it signifies itself to be true. Therefore, [the proposition] is false and not true, because for its truth it is required not only that *how* it signifies so it is the case, but that *howsoever* it signifies, so it is the case.

(74) Robert Fland, *Consequences*, §§ 8–10[170]: A proposition is called "copulative" when a mark like 'and' joins propositions to one another, like 'You run and you are at Rome'. A proposition is called "of coupled extreme" when the mark 'and' joints terms to one another, like 'You are a man and an animal', or 'Socrates and Plato run'. For a copulative to be true when imposition is withdrawn,[171] it is required that every part be true. But, by means of an imposition,[172] a copulative is true when every part of it is false. For instance, if the copulative 'You are an ass and you are a nanny goat' is imposed to signify precisely that God exists, and every part of it principally signifies nothing beyond its primary signification, then that copulative is true and every part of it is false. Likewise, a copulative is false and every part of it is true, and this by means of an imposition.[173] For instance, if the copulative 'You are a man and you are an animal' is assumed to signify precisely that you are an ass, and each of its categoricals has its primary signification, then the copulative is false and every part of it is true.

(75) Richard Lavenham, *Summulae logicales*, § 12–13[174]: Now it remains to treat of spoken and written terms. And first it is to be known that there are four different [kinds] of utterance, namely: articulate, inarticulate, literate, illiterate. An *articulate* utterance is one that represents something to the intellect of the speaker. For example, the utterance 'man' and the utterance 'animal'. An *inarticulate* utterance is one that represents nothing to the intellect of the speaker. For instance, the utterance of the jay and other birds. A *literate* utterance is one that can be written. An *illiterate* utterance is one that cannot be written. For instance, the hissing of snakes and the groans of the sick.

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[169] Scott ed., p. 135; Scott trans., p. 194. Hughes ed., p. 66.94–104; Hughes trans., § 7.7.1, p. 67 (paperback p. 48). I am translating from Hughes' Latin text.

[170] Spade, "Robert Fland's *Consequentiae*," p. 59.

[171] This refers to a special, new imposition, apart from the normal imposition usually in force.

[172] Ditto.

[173] Double ditto.

[174] Translated from Spade, "Notes on Richard Lavenham's So-Called *Summulae logicales*," pp. 380–381.

Thus one kind of utterance is articulate and literate. For instance, the utterance 'man' and the utterance '(I) love'.[175] Another kind is an articulate and illiterate utterance. For instance the hissing of snakes and the groans of the sick. Another kind is a literate and inarticulate utterance. For instance, 'choax', the utterance frogs [make],[176] and 'caw', the utterance crows [make]. Another kind is an illiterate and inarticulate utterance. For instance, the sound of trees[177] and the mooing of cows. Now the literate and articulate utterance is divided into the *name* and the *verb*. Discourse arises out of these parts [of speech].[178]

(76) Peter of Ailly, *Concepts and Insolubles*, Part I "Concepts," §§ 34–38[179]: It is to be noted further that, just as mental terms properly so called categorematic by signification naturally signify something or some things, so too mental terms syncategorematic by signification naturally signify no thing and no things.

Again, among mental terms properly so called some naturally signify nominally, and they are naturally names. Some signify naturally verbally, and they are naturally verbs. And so on for other parts of speech. Mental terms, therefore, are not properly said [to belong] to this or that part of speech through some "modes of signifying" added on.[180] Instead they belong to this or that part of speech *by themselves*, from their own nature.

Again, one mental term properly so called naturally signifies adjectivally. And so it naturally is an adjective. And another naturally signifies substantivally. And so it naturally is a substantive.

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[175] (I) love = *diligo*. It is one word, not two, in the Latin. The point is merely to give one example of a noun and one example of a verb.

[176] That's what Richard thinks frogs sound like.

[177] This is surprising. Normally, an "utterance" was regarded as having to be made by the vocal apparatus of an *animal*. (See Peter of Spain in Text **(20)**, above.) What kind of tree-sound is Richard thinking of here?

[178] Presumably Richard doesn't mean to exlude the other parts of speech here. He is merely being elliptical.

[179] Peter of Ailly, *Conceptus et insolubilia*, fols. 3^{vb}–4^{ra}; Spade trans., p. 23. The Latin is: "Notandum est ulterius quod sicut termini mentales proprie dicti categorematici significatione naturaliter significant aliquid vel aliqua sic [correcting the edition's sicut] etiam termini mentales syncategorematici significatione nihil naturaliter significant nec aliqua.

"Item terminorum mentalium proprie dictorum aliqui naturaliter significant nominaliter, et tales naturaliter sunt nomina. Aliqui naturaliter significant verbaliter, et tales sunt naturaliter verba. Et sic de aliis partibus orationis. Non ergo termini mentales dicti sunt proprie huius vel illius partis orationis per aliquos modos significandi superadditos sed se ipsis ex natura sua sunt istius vel illius partis orationis.

"Item aliquis terminus mentalis proprie dictus naturaliter significat adjective, et sic naturaliter est adjectivus. Et aliquis naturaliter significat substantive, et sic naturaliter est substantivus.

"Item aliquis terminus mentalis naturaliter est nominativi casus, alter genitivi, et sic de aliis.

"Item aliquis actus intellegendi sive conceptus naturaliter est primae personae, alter secundae et alter tertiae. Et sic de aliis accidentibus partium orationis, licet non de omnibus. Vide de hoc Ockham."

[180] Peter is rejecting the theory of the "modists" or "speculative grammarians." On "modism," see Ch. 2, p. 43, above.

Again, one mental term naturally is in the nominative case, and another is in the genitive, and so on.

Again, one act of understanding (or concept) naturally is in the first person, another in the second and another in the third. And so on for the other accidents of parts of speech. But not for all [of them]. See Ockham on this.

(77) Peter of Ailly, *Concepts and Insolubles*, Part II "Insolubles," §§ 94–95[181]: Second, note that among mental propositions like this, some signify purely naturally, [and] some signify not only naturally but [also] by convention, just as all spoken or written [propositions] always signify by convention. Hence mental propositions that are *not* likenesses of utterances or inscriptions that signify by convention are not different among men according to the diversity of those [utterances or inscriptions]. Instead, they are the same in species for all [people] insofar as they naturally signify and are naturally propositions, not by convention. For example, the mental proposition that corresponds to the spoken 'Man is an animal'.

But there are other mental propositions that are the images or likenesses of spoken or written propositions, drawn into the soul from exterior utterances or inscriptions or else made up by [the soul] itself.[182] These are *not* of the same kind in all men. Instead, some are in Greek and others are in Latin, signifying the same thing, just as the spoken or written propositions that a Greek utters outwardly[183] are other than those a Latin utters or writes. Anyone can notice propositions like this if he keeps quiet with his mouth and speaks in his heart by forming likenesses which, if he *were* to speak with his mouth, he *would* utter outwardly. Such propositions, therefore, even though they are naturally representations of utterances or inscriptions, yet conventionally represent that which is signified by convention

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[181] Peter of Ailly, *Conceptus et insolubilia*, fol. 7va; Spade trans., pp. 36–37. The Latin is: "Secundo, nota quod hujusmodi propositionum mentalium quaedam significant pure naturaliter, quaedam significant non solum naturaliter sed ad placitum, sicut omnes vocales aut scriptae semper significant ad placitum. Unde propositiones mentales quae non sunt similitudines vocum aut scripturarum ad placitum significantium non secundum illarum diversitatem diversificantur in hominibus, sed eaedem secundum speciem apud omnes tales inquantum significant naturaliter et sunt naturaliter propositiones et non ad placitum. Verbi gratia de propositione mentali correspondente huic vocali 'Homo est animal'.

"Sed alia sunt propositiones mentales quae sunt propositionum vocalium aut scripturarum imagines aut similitudines ab exterioribus vocibus vel scriptis in animam derivatae vel per ipsam fictae. Et istae non sunt eiusdem rationis in omnibus hominibus. Sed aliae sunt in graeco, aliae vero sunt in latino idem significantes, sicut aliae sunt propositiones vocales aut scriptae quas profert exterius graecus ab his quas profert [corr. from the edition's profer] aut scribit latinus. Et in hujusmodi propositiones potest quilibet advertere cum tacens ore loquatur corde formando similia quae si ore loqueretur proferret exterius. Tales igitur propositiones licet sint naturaliter repraesentationes vocum aut scripturarum tamen ad placitum repraesentant illud quod per scripturas aut voces hujusmodi ad placitum significatur, et ita ad placitum significant sicut voces aut scripturae, et sunt ad placitum propositiones sicut et ipsae. Verbi gratia de propositione mentali quae est naturalis representatio huius vocalis 'Homo est animal', et cum ad placitum representat quicquid significat illa vocalis, sicut patet cuilibet intuenti." There are some minor textual problems here. See Spade trans., p. 115 nn. 280, 283–284.

[182] That is, they are either in memory or in imagination.

[183] He certainly doesn't utter a *written* proposition, but you get the point.

through such inscriptions or utterances. And so they signify by convention just as utterances or inscriptions do, and they are propositions by convention just as the latter are. For example, the mental proposition that is a natural representation of the spoken 'Man is an animal', when it conventionally represents whatever the spoken [proposition] signifies. This is intuitively plain to anyone.

(78) Peter of Ailly, *Concepts and Insolubles*, Part II "Insolubles," from § 102[184]: For the mental proposition to which the spoken [proposition] 'Every whiteness is a quality' is subordinated is possible and in fact true. But the [mental proposition] to which the spoken [proposition] 'Every quality is a whiteness' is impossible.[185] But if they were composed in the way stated above, then the parts of the one [proposition] would be altogether like the parts of the other [proposition], and of the same species.[186] And they would be in the same first, indivisible subject.[187] As a consequence, those parts in the one [mental proposition] could not be varied any more than [the parts] in the other with respect to word-order or to [any] other relation among themselves or to their wholes. Thus the propositions would have the same specific kind. Now it is unintelligible that there be two wholes, each part of the one of which is like some part of the other and *vice versa*, and however one [part] is related to its whole or to the other parts of its whole so [too] the [part] similar to it in the other whole is related to its whole and the [other] parts of [its whole], unless those wholes are alike and of the same kind.

(79) Peter of Ailly, *Concepts and Insolubles*, Part II "Insolubles," §§ 105–106[188]: But perhaps it would be said to these [arguments] that although the parts are alike in such propositions, and in the same first subject, yet different proposi-

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[184] *Ed. cit*., fol. 8$^{ra–rb}$; Spade trans., p. 38. The Latin is: "Nam propositio mentalis cui subordinatur haec vocalis 'Omnis albedo est qualitas' est possibilis et de facto vera. Illa vero cui subordinatur ista vocalis 'Omnis qualitas est albedo' est impossibilis. Sed si illae componerentur modo praedicto tunc partes unius cum partibus alterius essent omnino similes et eiusdem speciei, et essent in eodem subiecto primo et indivisible. Et per consequens nulla situatione aut alia habitudine inter se vel ad sua tota possent variari partes illae in una plusquam in alia. Quare illae propositiones essent eiusdem rationis specificae. Modo non intellegibile est quod sint duo tota quorum quaelibet pars unius sit similis alicui parti alterius et econverso, et qualitercumque una se habeat ad suum totum vel ad alias partes sui totius taliter se habeat sibi similis in alio toto ad suum totum et suas partes, quin illa tota sint similia et eiusdem rationis." I have emended the text in a few places. For a discussion, see Spade trans., p. 117 nn. 311–312.

[185] This is the reading in the edition cited. A manuscript copy has 'entity' for 'quality' both here and in the preceding sentence, and that seems to be perhaps the better reading. See the discussion in Spade trans., p. 116 nn. 307–309.

[186] That is, they would differ only numerically.

[187] That is, the intellect. But in fact this is not implied by anything Peter has said so far. On the other hand, it's not needed for his argument either, so we can simply ignore it.

[188] Peter of Ailly, *Conceptus et insolubilia,* fol. 8^{rb}; Spade trans., p. 39. The Latin is: "Sed forte diceretur ad ista quod quamvis sint similes partes talium propositionum et in eodem subjecto primo, tamen propter ordinem diversum productionis earum diversae propositiones resultant. Et non est eadem pars secundum speciem subjectum in una et praedicatum in alia. Sed in una est subjectum, similis est in altera praedicatum. Nam unius subjectum secundum speciem est simile praedicato alterius et e contra. Similiter ejus propositionis pars prius producta est subjectum, pars vero posterius producta est praedicatum."

tions result on account of the different order of their production. And the same part in species is *not* subject in the one [proposition] and predicate in the other. Instead it is subject in one [proposition, and] *its like* is predicate in the other [proposition]. For the subject in the one [proposition] is like the predicate of the other [proposition] in species, and *vice versa*. Similarly, the part of the proposition produced earlier is the subject, but the part produced later is the predicate.

(80) Peter of Ailly, *Concepts and Insolubles*, Part II, "Insolubles," § 127[189]: First, because many people maintain, and it is quite arguable, that the concept the utterance 'white' corresponds to is a simple act of knowing. Nevertheless, it is equivalent in signifying to several acts of knowing. For it signifies whatever its nominal definition and any part of [its nominal definition] signifies. Thus it is usually granted that [the concept] amounts to no more than does the expression 'thing having inhering in it enough whiteness for its denomination'.[190]

(81) Peter Tartaret, from his *On Descent*[191]: This coupled descent also occurs under a term that supposits merely confusedly by reason of two quantifiers, the first of which is negative and the second affirmative. For instance, 'No head does every man have'. 'Man' there supposits merely confusedly, and a coupled descent can be made under it, as was seen earlier.

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[189] Peter of Ailly, *Conceptus et insolubilia*, fol. 9^{rb}; Spade trans., p. 42. The Latin is: "Tum quia multi ponunt et valde probabile est quod conceptus cui correspondet ista vox 'album' est notitia simplex, et tamen aequivalet in significando pluribus notitiis, quia significat quicquid significat suum quid nominis et quaelibet pars eius. Unde communiter conceditur quod valeat tantum sicut haec oratio 'res habens albedinem sibi inhaerentem sufficientem ad suam denominationem'. I have emended the first word of the text." See Spade trans., p. 121 n. 360. (The phrase 'Ed_2 and the MS' there should read 'Ed_1 and the MS'.)

[190] That is, enough whiteness to warrant calling it "white."

[191] Peter Tartaret, *De descensu,* fol. 195ra. The Latin is: "Fit etiam iste descensus copulatus sub termino supponente confuse tantum ratione duorum signorum quorum primum est negativum et secundum affirmativum, ut 'Nullum caput habet omnis homo'. 'Homo' ibi supponit confuse tantum, et sub eo licet fieri descensus copulatus, ut prius visum est."

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For authors before 1500, I have anglicized the names (hence "Peter of Spain," not "Petrus Hispanus"), and alphabetized them under their first or given name. This saves the reader from having to know in advance whether, for example, 'Duns' in 'John Duns Scotus' is a place-name or a family surname. (There *is* a place called "Duns," and Scotus came from there. But is he named after the town or is the town named after the family? He *certainly* should not be alphabetized under 'S', since 'Scotus' just means "the Scot.") So too for 'Buridan' in 'John Buridan', and likewise for other authors. Thus William of Ockham will be found under 'W', not under 'O' — and certainly not under 'G' for 'Guillelmus'. This convention is quite common and perhaps even "standard," although it is by no means universally observed even if it ought to be. Nevertheless, as a crutch for the memory, I have also cross-listed the names.

I have listed here everything cited in the chapters above. I have also listed certain other things you should know about, even if I have not explicitly mentioned them above. For further bibliography, see Ashworth, *The Tradition of Medieval Logic and Speculative Grammar*, and Reilly, "Ockham Bibliography: 1950–1967."

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