

elements in Suhrawardī's writings. This last approach led to a better grasp of the importance of Suhrawardī's logical theories (it is interesting to note that only the parts on metaphysics were included in Corbin's edition of the *Talwihāt*, *Muqawamāt*, and *Mashāri'*; and that his translation of the *Kitāb Hikmat al-Ishrāqī* skips over the first part on general questions regarding logic and epistemology). A few scholars have also pointed to other intellectual traditions, which may have contributed to Suhrawardī's system, such as Ismā'īlī thought, opening new perspectives still to be explored.

See also: ► Ibn Sīnā, Abū 'Alī (Avicenna) ► Ismā'īlī Philosophical Tradition ► Logic in the Arabic and Islamic World ► Philosophy, Arabic ► al-Shahrazūrī, Muḥammad ibn Maḥmūd Shams al-Dīn

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## Supposition Theory

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### Abstract

Supposition theory is one of the most important later medieval semantic theories (in the Latin tradition). Supposition is the property of terms (occurring in propositions) of standing for things, so that these things can be talked about by means of propositions, and supposition theory (in its different versions) is a theory codifying the different *uses* of terms in propositions, based on the idea that one and the same term can stand for different things when occurring in different propositional contexts. The different kinds of supposition are attempts to capture the phenomenon of semantic variation prompted by different propositional contexts. The theory emerged in the twelfth century, and the two main traditions contributing to its development were the tradition of commentaries on Aristotle's *Sophistical Refutations* and the tradition commenting on the fourth-century grammarian Priscian. Supposition theory acquired its first mature form in the thirteenth century, with the terminist/summulist tradition (in the works of William of Sherwood, Peter of Spain, Roger Bacon, and Lambert of Lagny/Auxerre), and was further developed in the fourteenth century by authors such as Walter Burley, William of Ockham, and John Buridan.

## Introduction

Supposition is one of the properties treated within the doctrine of the properties of terms, a doctrine whose development started in the twelfth century and which then became the cornerstone of later medieval semantics (see Read 2006, and the entry on Terms, Properties of in this volume). In fact, the development of this doctrine from the twelfth century onward consists precisely in “the growing dominance of just one of the properties of terms, supposition” (De Rijk 1982:161). Indeed, by the fourteenth century the concept of supposition had almost entirely superseded or absorbed the other properties of terms for the purposes of semantic analysis. A section (often several chapters) specifically on supposition is to be found in every single logical textbook of the thirteenth and fourteenth centuries (not to mention the several *De suppositionibus* treatises in the fourteenth century).

Very generally put, supposition is the property of terms (occurring in propositions) of standing for things, so that these things can be talked about by means of propositions. Thus described, it may appear to be the medieval counterpart of the modern concept of reference, and indeed such a comparison has often been put forward. But there are also significant dissimilarities between medieval theories of supposition and modern theories of reference, and in fact this comparison can be quite misleading (see Dutilh Novaes 2007: chap. 1). Rather, it seems more appropriate to view medieval theories of supposition as having no exact modern counterpart – one must attempt to understand them in their own terms. Moreover, throughout the centuries the concept of supposition “developed in response to a variety of needs, and one mistake of modern attempts at interpretation is to seek a unique rationale” for its various formulations at different stages of its development (Read 2006: Introduction).

Nevertheless, a fairly accurate general characterization of the different versions of supposition theory is as a theory codifying the different *uses* of terms in propositions; such variations of uses are important as such, but they are also crucial for key logical concepts such as truth, (fallacious or valid) inference, and propositional content. In other words, a trait common to the different formulations of the theory is the idea that one and the same term can stand for different things when occurring in different propositional contexts, thus having distinct semantic contributions to the content of a proposition at each time. The different kinds of supposition are attempts to capture the phenomenon of semantic variation prompted by different propositional contexts.

Indeed, theories of supposition deal with four main kinds of semantic variation:

1. Whether a term is taken literally or metaphorically.
2. The different ontological kinds of the *things* that one and the same term can stand for – the *supposita*: (extra-mental) individual entities, universal entities, mental entities, or linguistic entities.
3. The different temporal and modal statuses of the *supposita*: present, past, future, actual, or possible.
4. The different quantities of entities required to verify or falsify a proposition.

(1) The first kind of variation is usually codified by means of the distinction of proper vs. improper supposition. For reasons of space, though, improper supposition will not be analyzed in any detail here, and we shall concentrate on proper supposition. (2) The second kind of variation is accounted for by means of the distinction of the main kinds of proper supposition, usually personal, simple, and material supposition (such as in Ockham’s *Summa logicae*). The contextual element usually thought to provoke this kind of variation is the ontological kind(s) of the things of which the other term in the proposition is correctly predicated, as suggested by an oft-repeated motto (Ebbesen 1981:41): “subjects are such as the predicates permit” (see Sherwood 1966:113). (3) The third kind of variation is addressed by the concepts of ampliation and restriction, originally independent properties of terms that in later developments were absorbed by the supposition machinery. The contextual element usually (though not always) thought to provoke this kind of variation is the tense (past, present, future) and the mode (actual, possible, necessary) of the verb in the proposition. (4) The fourth kind of variation is dealt with by means of the distinction of the modes of (common) personal supposition, whose main modes are confused and distributive, merely confused, and determinate supposition (such as in Ockham’s *Summa logicae*). The contextual element usually thought to provoke this kind of variation is the presence or absence of syncategorematic terms (i.e., terms such as “every,” “some,” “no,” “not”) and word order. (This last distinction is treated elsewhere in this volume; see the entry on Quantification.)

Among the other early properties of terms, the only one having resisted total absorption by supposition in the long run is the property of signification. Indeed, while the notion of supposition implies that a given term does not have a stable, general meaning, but rather that its semantic contribution depends fundamentally on the propositional context (and thus on specific uses), the property of signification is thought to be context-independent and

pre-propositional. Signification concerns the first imposition of what a term shall be used to talk about, whereas supposition concerns uses of a term that already has a signification, and the semantic variations that may be prompted by the propositional context.

Another important point to bear in mind is that supposition theory was not simply a sterile exercise, developed for purely theoretical reasons. Much to the contrary, supposition theory was widely used as a semantic tool in an ample range of fields, most notably theology (Brown 1993) and physics. Hence, besides the bare presentations of the theory that one encounters in medieval logical textbooks, the theory actually put to practice is perhaps even more fascinating. For reasons of space we shall not deal with specific applications of supposition theory, but one should bear in mind that supposition theory was essentially developed to be *used*, to be put to practice as a semantic tool for the analysis and interpretation of discourse, and thus also to deal with matters of truth and inference in different fields of investigation.

In what follows, I present a chronological account of the development of supposition theory in the twelfth, thirteenth, and fourteenth centuries. Such a partition although obviously somewhat arbitrary is nonetheless supported by the significant coherence within each century. Moreover, it should not be taken to imply that after the fourteenth century no developments worth mentioning took place: much to the contrary, in very late medieval authors one finds sophisticated solutions to many of the issues left open by previous generations (see Dutilh Novaes 2008a; Ashworth 1974). Nevertheless, these three centuries embody what we could call the “classical era” of supposition theory.

### Early Developments: Twelfth Century

The historical emergence of supposition theory was the topic of De Rijk’s groundbreaking study *Logica modernorum*, published in three volumes (De Rijk 1962/1967) and including the edition of a wide range of twelfth- and thirteenth-century crucial (anonymous) texts. De Rijk identified two main traditions contributing to the development of supposition theory: the tradition of commentaries on Aristotle’s *Sophistical Refutations* and, more generally, of theories of fallacies; and the tradition commenting on the fourth-century grammarian Priscian. This account is still thought to be essentially correct, but since the publication of De Rijk’s study, some scholars (e.g., Ebbesen 1981) have questioned certain aspects of De Rijk’s account. Also, it appears that other elements (such as the theological tradition stemming from Gilbert of Poitiers’ writings; see Kneepkens 1987 and Valente

forthcoming) must also be taken into account to explain these developments. Furthermore, it is now believed that a more cautious timeframe for the seminal texts would be the very last decades of the twelfth century and the first decades of the thirteenth century, differing thus from De Rijk’s earlier dating of these texts. Nonetheless, the significance of these two traditions – the grammarian tradition and the tradition on the fallacies – is beyond any doubt, so let us examine how exactly the suppositional framework may have emerged from them.

At this early stage (second half of the twelfth century), *suppositio* is often related to the syntactic act of putting a term as the grammatical subject of a proposition (see Kneepkens 1987). But it has been argued (Ebbesen 1981) that even at this early stage, the *suppositio* terminology is used not only to refer to a syntactic act but also to the semantic relation between a term and what it stands for, which was later to become the standard notion of *suppositio*. In fact, these two apparently different acceptations of the *suppositio* terminology (present, for example, in the twelfth-century grammarian Peter Helias, whose *Summa super Priscianum* is a key text for these developments) – the syntactic one and the semantic one – are not really dissimilar if one considers that the prototypical subject of a proposition is a substantive noun and that, according to the grammatical tradition following Priscian, a noun signifies a substance together with a quality. Hence, by placing a noun as the subject of a proposition, one also naturally invokes the substance that the noun signifies. The noun “man,” for example, signifies the individual primary substances that are men insofar as they instantiate the universal nature humanity, and thus it may stand for men in a proposition. Moreover, following Aristotelian hylomorphism, universal natures and qualities are usually viewed as corresponding to forms, which are combined with matter to give rise to individuals. Thus, in the twelfth century, to be a *suppositum* is regularly used in the sense of being the bearer of a name or, equivalently, of a form/quality: and indeed, the notion of “bearer of form” is (according to Ebbesen 1981:38) crucial in the early development of supposition theory.

Unsurprisingly, in this period supposition is often viewed as a property pertaining exclusively to the subject term, the corresponding property for predicates being copulation; but soon thereafter (e.g., in the first English texts of the thirteenth century – *Logica* “*Cum sit nostra*,” *Logica* “*Ut dicit*,” and *Introductiones Parisienses*), supposition is seen as a property of predicates as well.

But even at this early stage, it is also widely acknowledged that terms can be used to stand for things other than

what they signify depending on the specific context of use. Particularly in the formulation of grammatical theories, one must often use a term to talk about the very term itself (for example, to say that “man” is a noun and that “to run” is a verb), and thus not to talk about the thing(s) they usually stand for. Now, in order to indicate this autonymic use of a term, twelfth-century authors belonging to the grammatical tradition (such as in William of Conches, Adelard of Bath and Peter Helias (De Rijk 1962:108–109)) often spoke of terms being “materially imposed” (*materiale impositum*) in such cases. The notion of *materiale impositum* is the forerunner of the later notion of material supposition (see Rosier-Catach 2003), to appear for the first time in William of Sherwood, which again indicates the crucial role of the grammarian tradition for the development of supposition theory.

As for the fallacies tradition, it is immediately apparent why the fact that the very same term can be used in different acceptations is of crucial importance for the diagnosis of fallacious arguments; Ebbesen (1981:39) argues that in the twelfth century this might have been seen as the main purpose of supposition theory. Generally speaking, fallacies are arguments that appear to be sound in that they seem to display one of the forms usually associated with sound arguments (for example, a valid syllogistic mood), but which are in fact unsound in that they feature true premises leading to (what appears to be) a false conclusion. The challenge is to identify where the problem lies, i.e., what (semantic) phenomenon is behind the false appearance of validity. A standard example of a fallacy is:

<i>Homo est dignissima creaturarum</i>	(Man is the worthiest of creatures)
<i>Sortes est homo</i>	(Socrates is a man)
<i>Ergo Sortes est dignissima creaturarum</i>	(So Socrates is the worthiest of creatures)

This is an obvious fallacy because the premises are true but the conclusion is false, and yet it does seem to present a valid (syllogistic) form. Intuitively, we immediately perceive that the problem lies in the different uses of the middle term “man” in the first and second premises: in the first one, “man” seems to stand for the nature common to all men, i.e., humanity, while in the second one it seems to stand for a particular man, i.e., an individual instantiating the common nature.

Traditionally, a fallacy such as this one is diagnosed as a fallacy of equivocation, as “man” is used in equivocal ways in the first premise and in the second premise. Now, it is precisely this variation of uses of one and the same term in different propositional contexts that supposition

theory seeks to codify. In the case of the example above, supposition theory will allow the theorist to say that the term “man” suppositis for different things in the first and second premises (a common nature vs. an individual man), and thus that it has different kinds of supposition. Typically, the occurrence of “man” in the first premise is said to have simple supposition (insofar as the proposition is true), whereas the occurrence of the same term in the second premise is said to have personal supposition (insofar as the proposition is true). Indeed, in the fourteenth century, with Ockham (*Summa logicae* I chap. 65) and Burley (*De puritate* Longer Treatise §44), the distinction between personal, simple, and material supposition is still associated to the fallacy of equivocation. Now, for an inference to be valid, the recurring terms must supposit for the same things in all premises, and thus must have the same kind of supposition; in these early developments, one encounters formulations of rules of the form “no inference is possible from supposition A to supposition B” (Ebbesen 1981:39).

### The Age of Terminism: Thirteenth Century

The first decades of the thirteenth century are characterized by logical texts (several of which are edited in De Rijk 1962/1967) still presenting supposition theory in its early stages. Its first reasonably mature versions, where it acquires the more or less standard shape it was to retain for many centuries, are to be found in the writings of the thirteenth-century terminists, also known as “summulists” because they produced complete overviews of logic (*summa*, “sum” or *summula*, “little sum”) where the properties of terms, and supposition in particular, occupy a key position. The main authors of this generation are William of Sherwood, Peter of Spain, Roger Bacon, and Lambert of Auxerre/Lagny, each of them having written at least one comprehensive logical text.

Moreover, the thirteenth century is also the period when the Oxford/Paris opposition becomes significant. In effect, while in the twelfth century the development of supposition theory is restricted to the Parisian schools, the thirteenth century witnesses the emergence of a distinctively Oxford school in logic, and concerning supposition in particular, even though there were many points of mutual influence between the two centers (see De Libera 1982). One distinctive characteristic of the Parisian tradition is the importance of natural supposition, which is usually construed as the non-contextual, stable supposition of a term (resembling thus the notion of signification), as opposed to accident supposition, i.e., the supposition that a term actually acquires in a given propositional context (such as in Peter of Spain and

Lambert of Auxerre/Lagny). Indeed, natural supposition is the only variation in the development of this concept that concerns terms out of a propositional context.

The four authors just mentioned each offer a particular version of supposition theory, each with its own divisions and subdivisions (for trees representing these divisions per author, see Spade 1996:272–276). In fact, the different versions of the theory recognize different divisions and subdivisions of supposition, but they mostly agree on the definitions of the kinds of supposition that they do recognize. For the present purposes, let us examine the divisions and subdivisions presented by William of Sherwood in his *Introduction to Logic*, as his theory contains all the kinds and modes of supposition that remained influential throughout the fourteenth century and beyond.

Sherwood's first division of proper supposition is between formal and material supposition. He defines formal supposition as “when a word supposits what it signifies” (William of Sherwood 1966:107), as signification is inherently related to forms: for Sherwood, the signification of a common term is the universal form it corresponds to, e.g., humanity in the case of “man.” But formal supposition is of two kinds: simple supposition is when a term supposits “for the signified form”; personal supposition is when a term supposits “for a thing bearing the form” (Sherwood 1966:107), that is, for the individuals instantiating the universal nature. Indeed, these are the definitions of personal and simple supposition that one generally encounters in writings of the thirteenth and fourteenth centuries (with an important modification regarding simple supposition brought about by Ockham, as we shall see). Material supposition is opposed to formal supposition in that it is not significative; indeed, Sherwood continues the tradition of referring to autonymic uses of a word (i.e., standing for itself) as “material,” as in the notion of *materiale impositum* discussed above.

These three main kinds of proper supposition – personal, simple, and material – are in effect to be found in most fourteenth-century texts (except for those following Buridan in his dismissal of simple supposition), and account for the variation of ontological kinds of *supposita* (variation (2) above). Interestingly, none of the other thirteenth-century main texts has either formal or material supposition as kinds of supposition, but they all have personal and simple supposition: for Roger Bacon and Lambert of Auxerre, what Sherwood understood as material supposition, namely, the supposition of a term for itself or for other expressions *qua* expressions, becomes a variation of simple supposition. But formal supposition

and especially material supposition make a resounding comeback in the fourteenth century.

Another division of formal supposition presented by Sherwood is between common and discrete supposition. It is unclear whether Sherwood intends it to be a subdivision of the simple-personal division or the other way round – or perhaps as an independent division altogether. Either way, the subsequent tradition usually treats this distinction as a subdivision of personal supposition: common supposition is the supposition of common terms, i.e., of terms not meant to designate one specific individual, while discrete supposition is the supposition of singular terms such as proper names and demonstrative pronouns, which pick out one specific individual.

For Sherwood, personal common supposition is further subdivided into determinate and confused supposition; confused supposition is then divided into merely confused, and confused and distributive; and finally, the latter is divided into mobile and immobile. The divisions of the modes of personal common supposition are then to be found in virtually all subsequent texts (although the mobile vs. immobile distinction tends to disappear), and account for the different quantities of *supposita* that are required for the verification of different propositional contexts (variation (4) above, treated elsewhere in this volume.)

As for variation (3) above, it is usually accounted for by means of the concepts of ampliation and restriction, as in William of Sherwood, Peter of Spain, and Lambert of Auxerre/Lagny; Sherwood also discusses this kind of variation within the context of his theory of composite and divided senses of modal propositions. The idea is that some propositional contexts amplify the range of *supposita* being supposed for by a term, for example in a modal sentence such as “A man can be white”; in this case, the supposition of “man” is not limited to the presently existing men, but also to possible men. A similar phenomenon occurs with tensed propositions. Other contexts restrict the range of supposition, for example, when an adjective modifies a noun, such as “white man.” But ampliation and restriction usually do not generate subkinds of supposition, rather it is usually said that the supposition of a given term is amplified or restricted.

In the last decades of the thirteenth century, there was a marked decline of the influence of terminist logic, in particular in Paris, where an alternative approach to semantics became very influential, that of the *modistae* (Ebbesen 1981, 1985). The *modistae* influence in Oxford was less intense, but still felt. In any case, terminism did not go into total dormant state in this period, as is

sometimes thought: Roger Bacon's *De signis*, where a sophisticated version of supposition theory is presented (improving his own earlier theory presented in his *Summulae dialectices*) was written in the last decades of the thirteenth century, in Oxford (see De Libera 1982).

### Later Developments: Fourteenth Century and Beyond

In the fourteenth century, terminist logic somehow reemerges as the chief doctrine for semantic analysis, completely replacing the *modistae* theories. In the very first years of the century, at Oxford, Walter Burley writes a *De suppositionibus* treatise, essentially taking over Sherwood's distinctions of supposition. At the same time, Burley seems to have been the first to introduce quite a few innovations, which were to remain influential in the fourteenth century and beyond (see Brown 1972). Thus, one can say that Burley's treatise inaugurates fourteenth-century-style supposition theory.

The next important text in the development of supposition theory was composed in the 1320s by William of Ockham, also an Englishman: his *Summa logicae*. Ockham's *Summa* is revolutionary for many different reasons, among which his purely extensional definition of signification – for Ockham, a common term such as “man” signifies each and every man, not the universal humanity. Another important innovation developed by Ockham (but with earlier signs in the thirteenth century, for example, in Lambert of Auxerre/Lagny; see Read 2006: sect. 3) is the idea that the concept itself is a sign, just as written and spoken terms. In fact, Ockham develops the idea of a mental language functioning very much like written and spoken language, and thus equally apt to undergo semantic analysis; indeed, Ockham applies the supposition apparatus also to mental propositions (see Panaccio 1999), but with some paradoxical results (see Spade 1980).

While Ockham was clearly inspired by Burley's treatise (the section on the supposition of relatives is almost an exact copy of the same section in Burley's treatise see Brown 1972), he had to adjust the supposition machinery to the ontological and semantic modifications he had introduced. Thus, for Ockham simple supposition is no longer the supposition for an extra-mental universal, as such things simply do not exist in his ontology. Rather, he reformulates simple supposition as the supposition for the mental term corresponding to the spoken or written term in question. Similarly, personal supposition becomes the supposition for the thing(s) that the term signifies, given his reformulation of the notion of signification (*Summa logicae* I, chap. 64). For the rest, in particular with respect

to the subdivisions of the modes of personal supposition, Ockham maintains the traditional divisions.

After Ockham, one important tradition in the fourteenth century (following Buridan) simply dispenses with simple supposition altogether, maintaining only personal and material as the main kinds of proper supposition. The idea is this: if simple supposition is the supposition for a mental term, as Ockham has it, then it is in fact a kind of material supposition (Buridan, *Summulae de dialectica* 4.3.2). Like Ockham, Buridan rejects the existence of extra-mental universals, so for him simple supposition becomes a superfluous concept.

Another author writing in the Buridanian tradition, Marsilius of Inghen, introduces another important innovation, namely that of applying the subdivisions traditionally reserved to personal supposition to material supposition as well (see Marsilius of Inghen 1983 and Dutilh Novaes 2008a:sect. 2). With this move, it becomes possible to “quantify” over occurrences of spoken, written, and mental terms being the material *supposita* of terms, just as one quantifies over the extra-mental individuals that are typically (but not always) the personal *supposita* of terms.

All in all, in the fourteenth century supposition theory is widely applied to a variety of topics; in fact, it becomes an over-arching methodological tool. Ockham, for example, makes extensive use of it for theological as well as physical analyses. In effect, a significant application of supposition theory in the fourteenth century is to the issues surrounding the dogma of the Trinity (see the entry on Trinitarian Logic in this volume). Moreover, the theory continues to develop well into the fifteenth and sixteenth century. (The interested reader is urged to consult the secondary literature on these developments, in particular the work of E.J. Ashworth.)

### Conclusion

For reasons of space, this brief overview has touched upon only some of the important aspects in the development of supposition theory only. However, it seems that two general issues must still be addressed, concerning the very gist and purpose of the theory: (1) What is to determine the kind(s) of supposition that a term has in a given proposition? (2) Is there always only one (correct) kind of supposition for a term in a given propositional context? These are difficult questions with no single answer; different authors seem to have held different views.

Concerning (1), most authors seem to hold that the propositional context is indeed the main determining element, as suggested by the maxim “subjects are such as the predicates permit.” Some authors (such as Paul of

Venice, at the end of the fourteenth century; see his *Logica parva*, p 27), however, maintain that the desired truth of the proposition, or in any case its intended meaning, is what governs the kinds of supposition allowed for its terms. Others, such as Buridan, seem to think that ultimately the agreed-upon interpretation of a statement by the speakers involved in the situation is what really determines the supposition of a term. Yet other authors, in particular Ockham, present rules for the determination of the supposition of the terms in a given propositional context that seem to function almost algorithmically (see Dutilh Novaes 2008b).

As for the second issue, Ockham (like Burley and many other fourteenth-century authors) in fact allows for multiple possibilities of kinds of supposition for a term in one and the same propositional context, entailing thus that the context does not always uniquely determine the supposition of a term. For Ockham, supposition theory is an important device for the generation of the (often multiple) possible readings of propositions (corresponding to the different kinds of supposition permitted by a given propositional context), what in the fourteenth century is known as “distinguishing” propositions. But not all authors insist on the possibility of generating the multiple readings of propositions by means of supposition theory: in earlier developments, the underlying idea seems to be that there should be a unique correct kind of supposition for a term in a given propositional context. However, in both cases supposition theory is essentially a theory for semantic analysis and interpretation.

*See also:* ► Gilbert of Poitiers ► John Buridan ► Lambert of Lagny ► Logic ► Marsilius of Inghen ► Mental Language ► Modal Theories and Modal Logic ► Modistae ► Paul of Venice ► Peter Helias ► Peter of Spain ► Quantification ► Roger Bacon ► Terms, Properties of ► Trinitarian Logic ► Truth, Theories of ► Walter Burley ► William of Ockham ► William of Sherwood

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## Swineshead, Richard

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## Syllogism, Theories of

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### Abstract

Aristotle's theory of the syllogism is one of the most influential theories ever developed. The theory of the syllogism for assertoric sentences was a remarkable achievement by Aristotle and it was virtually complete already from the beginning. Medieval logicians could generally not add much to it. Small changes were made and it was systematized in different ways. It was not until John Buridan in the mid-fourteenth century reworked logic in general and placed the theory in a context of a wider logic of consequences that the picture of syllogistics also

changed. The theory of the modal syllogism was at a completely different stage of completion in the *Prior Analytics*, and in the hands of the medievals it went through a remarkable development.

In the *Prior Analytics* Aristotle presents the first logical system, that is, the theory of the syllogism. A syllogism is a deduction consisting of three sentences – two premises and a conclusion. Syllogistic sentences are categorical sentences involving a predicate and a subject connected by a copula (verb) and they are divided into four different classes, namely universal affirmative (A), particular affirmative (I), universal negative (E), and particular negative (O) sentences. Aristotle writes them as follows:

- A – “A belongs to all B” (AaB).  
E – “A does not belong to any B” (AeB).  
I – “A belongs to some B” (AiB).  
O – “A does not belong to some B” (AoB).

The subject and predicate in the categorical sentences used in a syllogism are called terms (*horoi*) by Aristotle. There are three terms in a syllogism, a major, a minor, and a middle term. The major and the minor terms are called the extremes (*akra*), respectively major extreme (*meizon akron*) and minor extreme (*elaton akron*), and they are the predicate and the subject of the conclusion. The middle (*meson*) term is what joins the two premises. These three terms can be combined in different ways to form three figures (*skhêmata*). Aristotle presents the following three in the *Prior Analytics* (A is the major, B the middle, and C the minor term):

When the four categorical sentences are placed into these three figures Aristotle ends up with the following 14 valid moods (in parenthesis are the medieval mnemonic names for the valid moods).

A fourth figure was discussed in ancient times as well as during the Middle Ages. In the Aristotelian syllogistic it had the following form:

By treating this figure we derive additional valid moods, which are all mentioned by Aristotle in different parts of the

**Syllogism, Theories of. Table 1** The three Aristotelian figures of the syllogisms

I	II	III
A – B	B – A	A – B
B – C	B – C	C – B
A – C	A – C	A – C